The New York State
Conservationist
State of New York Conservation Department
August-September 1956

Anniversary

Just ten years ago this August, THE NEW YORK STATE CONSERVATIONIST made its appearance, editorially heralded as "the first real magazine published for the people of New York State by their Conservation Department."

In that first issue, the editors stated their objectives very simply and very clearly—to bring the story of conservation to the people of the State; to create, thereby, a clearer concept of the vast scope of conservation and a better understanding of how vitally we are affected by the way we manage our soils and water, our forests and our wildlife resources. They argued, with good logic, we think, that this magazine should form a bond between us; a common ground where we might join to solve these problems so important to our welfare.

At this point, ten years later, we think the men who, over the past decade, have piloted THE CONSERVATIONIST have come about as close to steering a straight course toward these objectives as it is humanly possible to do. But we are neither the judge nor the jury. This magazine is published for the people of the State and it is they who must bring in the verdict.

There's an interesting twist to the case, though. When these principles were first stated back in August of 1946, our "jury" was just a handful of subscribers. Now it numbers more than seventy thousand and is, we gratefully report, growing every day.

But there is one phase upon which we, as a member of the conservation crew, can testify: There's been nothing dull about the passage. There have been problems every step of the way and there has been real progress too. The landmarks along the course are far too many to review, but some stand out sharply: The Forest Preserve debate; a sober and searching analysis of its constitutional status in terms of proper management to meet the needs of the people today and in the future.—The land hurricane of 1950 and the prompt but long-time salvage operation necessitated by its devestation.—Establishment of the Junior Hunter Training Program; a pioneer step in this country.—Development of the Conservation Camp program for boys.—Paving the way for bringing conservation education into the schools.—Analysis of the problems involved in getting 1/6 of the State out of its coma of abandonment,—and more, and more.

But against this ten-year background of tangible developments we're most impressed, we think, by an intangible. We feel that today a larger proportion of the people of this State have a better grasp of what conservation really means and greater willingness to get out and do something about it than was true ten years ago. If that is the case and if THE CONSERVATIONIST has had even a small part in bringing that about, we would ask for no greater reward.

—A. W. BROMLEY

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AUGUST-SEPTEMBER, 1956

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The Conservationist is an official publication of the N.Y.S. Conservation Dept., published every two months at the Department's offices, Arcade Bldg., Albany, N. Y. No advertising accepted. Subscription rate $2.00 per year. Entered as Second Class matter July 24, 1946 at the Post Office at Albany, N. Y. under Act of March 3, 1879. Printed in U. S. A.

Tree Farms Come to New York

by Harold D. Ellis, *District Manager, American Forest Products Industries, Inc.*

WHAT'S one of the greatest needs today on New York State's more than 11 million acres of privately-owned forest land? Professional foresters will tell you something like more "forest management" or more "sustained yield" harvesting or more "silviculture." Boiled down into simpler terms, what they mean is more growing of trees as a crop—more "tree farming."

To reach just that objective, industry, state and college forestry leaders have joined together to inaugurate the American Tree Farm System of voluntary, private forest management in New York. New here, but tested and proved in 42 other states over a 15-year period, the Tree Farm program encourages timberland owners everywhere to practice forest management by giving public recognition to those owners who are doing a good forestry job.

The New York program was formally launched in a simple but impressive ceremony Saturday, June 30, when 38 "charter" New York Tree Farms, ranging from a paper company's 27,902 acres in Hamilton County to an Otsego farmer's 25 acres, were officially dedicated. The ceremony, held in the midst of a heavily-wooded area at the International Paper Company's Forest Management Headquarters just outside the Village of Speculator, featured the presentation of Tree Farm certificates and signs.

G. A. Pesez, Glens Falls, International Paper Company resident woodlands manager and chairman of the New York Tree Farm Committee, set the tone of the ceremony and pointed up the aims of the program when he declared, "Forest industries recognize that they have a job not only of carrying the message of protection and technical assistance to landowners in their area, but also of selling a longer term philosophy to those forest operators who may now be thinking only of their current supply."

"All over America," Mr. Pesez said, "wood is receiving increased attention as raw material. Woodland owners are rediscovering the fact that trees grow. Placed under good forest management, which is so readily available in New York, through the Forest Practice Act of 1946, growing trees contribute to our local and regional woodpiles and bring a gilt edged return to their owners."

State Senator Wheeler A. Milmoe of Canastota, chairman of the Joint Legislative Committee on Natural Resources, welcomed the Tree Farm program to New York as one which "will greatly help in guaranteeing a betterment of forest conditions and the perpetuation of the forest resources of the Empire State." The Legislator hailed the Adirondacks and Hamilton County in particular as one of the Nation's great forest regions. "It is therefore most fitting that we here launch an additional program for the improvement of our forest resources," he said.

W. M. Foss, director of the Conservation Department's Division of Lands and Forests, said it "gave him a great deal of pleasure" to participate in the Tree Farm program because, "with the co-operation of industry, we are going to do a great job. I am glad to see industry behind a program to encourage forest management."

Congratulations were extended to the 38 charter Tree Farmers by J. C. McClellan, Washington, D. C., chief forester for American Forest Products Industries, Inc., national sponsor of the Tree Farm movement. The charter group, Mr. McClellan said, "may well be proud that they are pioneers in this tree growing program which is going to mean so much to New York in the years to come. He offered his thanks to the District Forest Practice Boards for their co-operation in getting the Tree Farm program off to a flying start.

The New York launching represents another milestone in the movement which was born in 1941 when the Nation's first Tree Farm, the 120,000-acre Clemons Tree Farm near Montesano, Wash., was dedicated. The name "Tree Farm" was the happy choice of a country newspaper editor as a simple, understandable term to convey to the public the concept of growing timber as a renewable crop. It clearly expressed the principle of conservation through wise use.

From this beginning, the program has grown steadily until it now includes more than 8,300 Tree Farms embracing over 39 million acres of timberland in 43 states. Wood on this tremendous area—greater than the entire land area of the State of New York—is estimated to be growing two to three times faster than on unmanaged lands.

The Conservation Department welcomes the establishment of the Tree Farm program in New York, and is already co-operating actively with it. We feel that the assistance which the State has given to private woodland owners under the Forest Practice Act since 1946 has provided a solid foundation for a program such as Tree Farms, which seeks to recognize good forest management by the private owner—whether a Forest Practice Act co-operator, an industry or one who has gone ahead "on his own" or with the help of a consulting forester.

Forest management—the end toward which all forestry is directed—is perhaps the hardest of all forestry activities to dramatize. Everybody knows about tree-planting, fire protection and insect control; we all enjoy the recreational opportunities afforded by the forest environment. But how can we make anything dramatic or glamorous out of "annual increment," "sustained yield" or "cords per acre?" We think that Tree Farms, with its genuine concern for forest management and its resources for getting the facts across to the public, is going to do just that.

Tree farmer John Ardison, Groghan, N. Y. rests on stump of maple harvested for sawlogs

Charter members of New York's Tree Farms pose at dedication ceremonies, June 30, Spectacular

Logs from an 165-acre Gloversville Tree Farm ready for sawing into lumber. Mill is on the farm property

While production of better quality and more wood crops is the basic aim on Tree Farms, the program has its benefits for the sportsman. Wildlife and timber crops grow best together if trees are harvested on a planned scientific basis rather than being carelessly cut or being allowed to stand and rot to death at an overmature age. Proper timber harvests benefit wildlife by providing browse for deer and other grazing animals while retaining ample timber stands to regulate stream flow and to provide game cover.

A Tree Farm is defined as an area of privately-owned, tax-paying land dedicated by its owner to the growing and harvesting of repeated wood crops. Basic nationwide standards, modified by states to fit local conditions, have been set by the forest industry trustees of AFPI. The general requirements to become a certified Tree Farmer are the protection of woodlands from fire, insects and disease while carrying on a planned program of regular harvests.

The Empire State program is sponsored by the New York Forest Industries Committee, representing major wood-dependent industries of the State and headed by H. V. Hart of the St. Regis Paper Company, Deferiet. Co-operating with the industries committee are the State and District Forest Practices Boards, the State Conservation Department, the College of Forestry of the State University of New York and the New York State College of Agriculture.

Actual operation of the program is in the hands of the New York Tree Farm Committee of 12 technical foresters representing the interested groups and headed by Mr. Pesez. Tree Farm certification is granted by this group upon consideration of a detailed inspection report on the landowner's property.

For information on becoming a certified Tree Farmer, the landowner may contact any forester, write to Chairman, New York Tree Farm Committee, Box 500, Glens Falls, to New York Forest Industries Committee, Room 1936, 11 West 42nd Street, New York 36, N. Y., or to AFPI at 1816 N Street, N.W., Washington 6, D. C.

Upon receipt of an application for Tree Farm certification, an inspection of the property is made free of charge by a graduate forester, who may be employed by government or industry or may be self-employed. If the land appears qualified, or even if it is in the doubtful classification, the forester submits an inspection report to the Tree Farm Committee which periodically considers inspection reports at open meetings. If the land obviously is not qualified, the inspecting forester will tell the landowner what steps he must take. Often this means, the landowner will have to become a Forest Practice Act co-operator in order to get the benefit of free State forestry services.

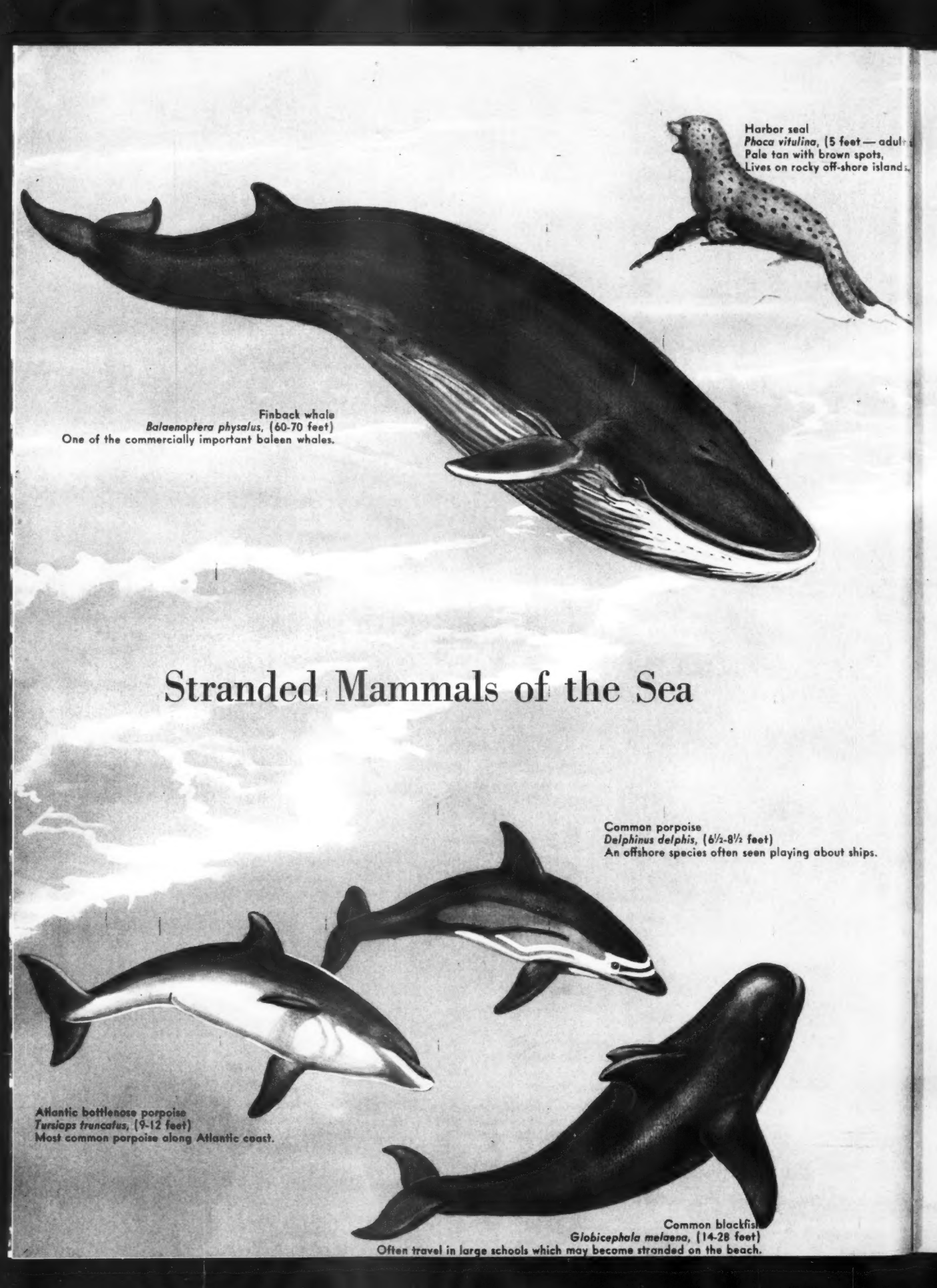
When an inspection report has been approved by the Tree Farm Committee, the landowner receives a lapel pin, a certificate and a handsome green and white sign to display in a conspicuous place on his property as a badge of good forest management. He also gets a free subscription to the quarterly AFPI publication, *The American Tree Farmer*.

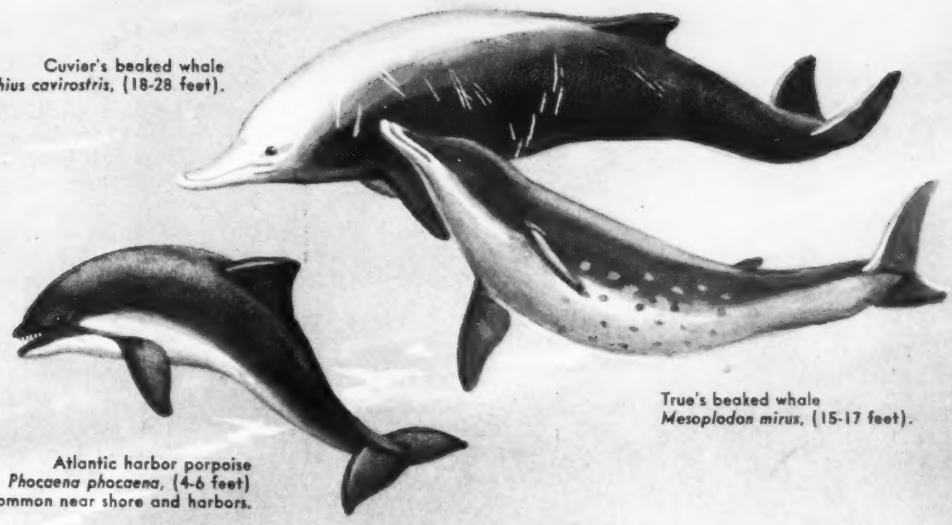
Because the big aim of the program is better management, forestry intentions are not enough to win certification. Actual, concrete forestry steps, such as selective harvests, pruning, weeding or thinning, must have been carried out. Generally speaking, planting is not an essential part of the program, although Tree Farmers are expected to reforest barren areas. Planting alone is not enough to win certification — the plantation must have received some *bona fide* cultural treatment.

As stated by Mr. McClellan at the dedication ceremony: "It is difficult to understand why every woodland owner doesn't follow Tree Farm practices. It seems somewhat paradoxical that a farmer will go on year after year growing half a crop or no crop from his woodland while doing his utmost with his tillable land. I am sure that no New York farmer would plant corn and then forget it, but I am just as sure that some of them have forgotten about their woodlot as a continual source of income which justifies reasonable care. Half a loaf from a woodlot is a pure waste of resources."

Working to get the whole loaf from their forest land is just what won certification for the 38 charter New York Tree Farms on their total 52,223 acres. The owners, many of them eligible through their participation in the Forest Practice Act, represent a cross section of American life typical of the national Tree Farm membership. Included are six forest industries, 21 farmers, three retired individuals, two professional foresters, a department store owner, a lawyer, a house builder, a poultry raiser, and a fruit and stock grower. But, from whatever walk in life, they share the appreciation of the concept that trees are a crop just like potatoes, corn or hay.

The Tree Farm movement offers an opportunity and a challenge to New York. The latchkey has been turned on a door which opens to possibilities of new achievements in timber production in the Empire State. At the same time, under the Tree Farm concept of conservation through wise use, we can have our trees for both enjoyment and use.


Harbor seal
Phoca vitulina, (5 feet — adult
Pale tan with brown spots,
Lives on rocky off-shore islands.
Finback whale
Balaenoptera physalus, (60-70 feet)
One of the commercially important baleen whales.
Stranded Mammals of the Sea
Common porpoise
Delphinus delphis, (6½-8½ feet)
An offshore species often seen playing about ships.
Atlantic bottlenose porpoise
Tursiops truncatus, (9-12 feet)
Most common porpoise along Atlantic coast.
Common blackfish
Globicephala melaena, (14-28 feet)
Often travel in large schools which may become stranded on the beach.



Cuvier's beaked whale
Ziphius cavirostris, (18-28 feet).

True's beaked whale
Mesoplodon mirus, (15-17 feet).

Atlantic harbor porpoise
Phocaena phocaena, (4-6 feet)
Common near shore and harbors.

WITH 600 miles of coast subject to currents, tides and storms the shores of Long Island collect an interesting array of wildlife remains. Occasionally, rolled ashore among the starfish, shells, and crustacea, are representatives of the sea mammals — including whales, dolphins, porpoises, and the somewhat amphibious seals. To layman and biologist alike, these are among the least known and most intriguing of New York's citizens and visitors.

Through the co-operation of Dr. George G. Goodwin of the American Museum we were able to obtain the following specific records of recoveries:

Sperm whale *(Physeter catodon)* — Great South Bay, Feb. 28, 1918; Pigmy sperm whale *(Kogia breviceps)* — Long Beach, Feb. 28, 1914; Cuvier's beaked whale *(Ziphius cavirostris)*—Long Beach, Aug. 15, 1914; True's beaked whale *(Mesoplodon mirus)*—Edgemere, Jan. 14, 1934; Common blackfish *(Globicephala melaena)* — Flushing Creek, June 13, 1944; Finback whale *(Balaenoptera physalus)* — Sheepshead Bay, Nov. 14, 1936, Huntington Harbor, Oct. 22, 1946 and Shell Bank Creek, Feb. 16, 1946; Harbor seal *(Phoca vitulina)* — Montauk Point, Jan. 7, 1954; Blainville's beaked whale *(Mesoplodon densirostris)*—Southhampton, May 12, 1925; Gervais beaked whale *(Mesoplodon europaeus)* — Far Rockaway Beach, Dec. 22, 1933; Bottlenosed porpoise *(Tursiops truncatus)* — common; Harbor porpoise *(Phocaena phocaena)* — common; Common porpoise *(Delphinus delphis)*.

The accompanying series of pictures is presented as an aid to identification of these great sea animals. The discovery of any of these or similar creatures along Long Island shores should be reported immediately to the Department of Mammals, American Museum of Natural History, Central Park West at 79th Street, New York 24, N. Y.

Pigmy sperm whale
Kogia breviceps, (9-13 feet)
A toothed species that is seldom seen.

TRIMM

Sperm whale
Physeter catodon, (40-60 feet)
This species has teeth and apparently often feeds on giant squids.

Canine poetry in motion. National Pheasant Championship Trial, Three Rivers Area, 1955

Field Trials

IN an article, *Gun Dogs and Conservation*, appearing in THE CONSERVATIONIST for October-November, 1955, field trials were recognized as being one of the most effective means of popularizing the use of good gunning dogs afield—an objective close to the hearts of conservationists and sportsmen alike who are aware of, and appalled by the loss each hunting season of dead and crippled game. Studies across the Nation have shown that for waterfowl the crippling loss amounts to approximately 25 per cent of the total hunter kill or some 5 million ducks annually. And with upland game such as pheasants and grouse the crippling loss in some localities, exceeds a quarter of the total kill.

Accordingly, the Conservation Department in New York has long taken an interest in promoting the development and use of good hunting dogs. This interest, and the reasons for it, are clearly stated in the foreword of the Department's recently adopted field trial policy:

"The use of hunting dogs has long been recognized as enhancing the hunters' chances for success, and adding greater pleasure to the sport of hunting. More recently, it has been recognized that wise use of sporting dogs can contribute materially to the conservation and wise use of harvestable game crops. This is especially true of the properly trained sporting dogs that retrieve, for they greatly reduce the tremendous wastage of game that is killed or wounded but not recovered.

"Today, the increasing popularity of field trials is a good omen for the promotion and further development of sporting dogs of many breeds. In many cases the field trial enthusiast may turn the major emphasis of his sporting interests to the competition and good fellowship of field trials. This is an important trend in a period of increasingly restricted hunting opportunity.

"Recognizing the importance of good hunting dogs in harvesting and saving game the Conservation Department, for many years, has co-operated with field trial groups by supplying farm-reared game birds for their trials. And, since 1946 the Department has broadened this co-operative program by providing certain State lands and facilities for the use of field trial groups."

With respect to game farm birds for field trial use, the Department, through the offices of the District Game Managers, will provide a maximum of 40 strong, free-flying pheasants for one-day trials having an entry of not fewer than 12 dogs, and a maximum of 75 pheasants for two-day trials having an entry of not fewer than 20 dogs. Sportsmen's groups wishing to hold such trials must schedule the events with the District Game Manager in their area and such trials are restricted to courses approved by the Game Manager. If more birds are required than the maximum provided by the Department, or if birds are to be shot in the course of such trial, the additional stock must be acquired from legal private sources.

This, we believe, is a good, straightforward and practical field trial policy. It clears away the red tape and cumbersome regulations that, in the past, governed the allotment of game farm birds to field trial groups, and it should be effective in creating even greater interest and participation in this worthwhile sport.

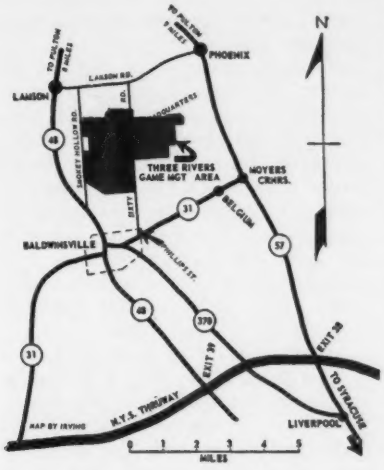
Meanwhile, the Department has been making rapid progress in developing certain of its Game Management Areas to handle various types of field trials during the non-gunning season. Of the 30 such tracts, three have been found particularly suited to the special cover and terrain requirements of specific trial types. These are:

Three Rivers Game Management Area

This area, comprising 2,600 acres, is located near the Village of Baldwinsville in Onondaga County and is managed pri-

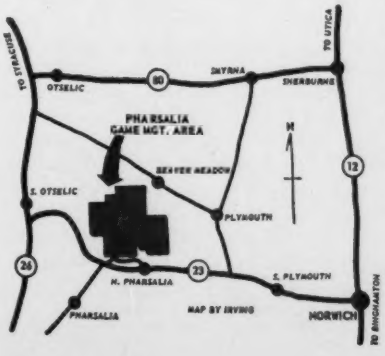
A pointer honors setter's find at National Pheasant Championship Trial, Three Rivers

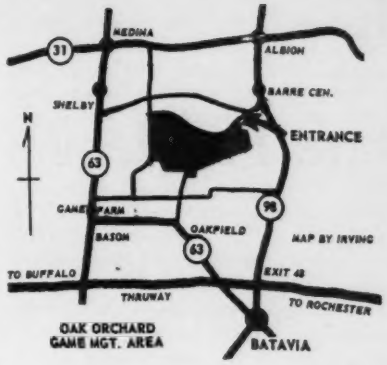
marily for cottontail rabbits, waterfowl and pheasants. It has three multiple courses of one hour each which can be converted to six one-half hour courses. These courses were developed with the assistance of nationally recognized field trial men for field trials on native pheasant. An area for one course pheasant trials with the bird field well situated for spectators is also included. Facilities are available for caring for dogs and horses and a fieldhouse is available for people attending. The area is also available for beagle trials as well as for bird dogs. Scheduling of trials for this area is handled by the District Game Manager's office at Syracuse.



Pharsalia Game Management Area

This area of 4,500 acres is located two miles west of the Village of North Pharsalia in Chenango County and is managed primarily for grouse, varying hare and deer. There are eight multiple courses for field trials on native grouse. These courses can be altered for half hour, hour or two-hour heats. Facilities are available for caring for horses and a fieldhouse is available for people attending. Scheduling of trials for the area is handled by the District Game Manager's office at Ithaca.





Oak Orchard Game Management Area

This area is located near the Village of Oakfield in Genesee County and comprises 2,275 acres, and has been developed primarily for waterfowl. The area has ideal facilities for both upland and waterfowl retrieving dog trials. A fieldhouse is available for the convenience of participants. Scheduling of trials for this area is handled by the District Game Manager's office at Scottsville.

Pharsalia was the first of the game management areas to be developed for field trial use. Here, in 1948, courses were laid out through the excellent grouse cover of the tract and each year since local and national grouse dog trials have been run there. This year the National Grouse Dog Futurity is scheduled for October 12-14.

Three Rivers, busiest of all the areas, has a full slate of pheasant and quail dog trials beginning September 15 and continuing, at frequent dates, through November 15. In addition to regional Weimaraner and Brittany trials, the area will again play host to such really big events as the National Amateur Pheasant Championship (October 4,5,6), the National Pheasant Futurity (October 8,9), the National Pheasant Championship (October 10,11) and the National Weimaraner Championship, November 10-15.

The big trial at Oak Orchard this season will be held September 7-9, sponsored by the Western N.Y. Retriever Club.

As set forth here the development of the Conservation Department's field trial facilities and present policy may appear to have been a simple and orderly achievement. On the contrary, it has evolved only through much trial and error and trial again. Even so, it would not today be so clear-cut and effective had it not been for the good counsel and guidance provided all along the way by a host of good sportsmen and hunting dog men. Further progress, of course, can and will be made, but at this point it appears we are well ahead in a really co-operative field trial program.

—Al Bromley

"The bird's right there, Boss!" A pointer shows championship form at the Three Rivers Trial

A labrador takes off for retrieve at Oak Orchard Trial. "Snow" on water is really luxuriant growth of duck weed

The Weakfish — An Interstate Problem

OPTIMISM is a feeling that, in recent years, has been rarely connected with the state of weakfishing in the bays of Long Island. Bluefish, porgies, fluke and flounder—all these are the subject of lively, if slightly exaggerated stories of exciting sport fishing trips to Plum Gut, the Middle Ground, the Mud Hole, or many of the other equally famous fishing spots known to the horde of rod and reel fans to which Long Island plays host. But, weakfish! Mention the beautifully speckled "sea trout," and heads shake, eyes roll, and you're in for a sad tale.

Although it is still true that a few shrewd and usually evasive fishermen know how and where to catch the wily "tide-runners" that appear in Peconic, Shinnecock and Great South bays, the overall fishermen's view of the weakfish is one of small size and equally small numbers. The average size of weakfish taken commercially and by hook and line during the last four years has been less than fourteen inches long. These appear to those who were around during the weakfish bonanza of the Twenties and Thirties, as starved and destitute offspring of the formerly numerous five-pound and upward fish.

What has happened to the once popular fishery? Catch records show the tremendous decline—from an average of a million pounds landed each year from 1920 to 1946 by the commercial fishermen of New York, to about 150,000 pounds in 1950 through 1954. Records for 1955 indicate a slight increase, but no one has yet burst into frenzied optimism, and it is just as well for the sport and commercial landings in the Spring of 1956 show no change from the doldrums.

Catch statistics can tell what has happened, but the reason behind the decline until recently has been a matter of conjecture only. One of the more popular opinions has been that the commercial fishery (pound nets, otter trawls, haul seines and gill nets) has removed spawning fish and thereby reduced the number of young produced each year. There has been no basis for this opinion, since in each of the past four years that the problem has been under investigation, large quantities of young-of-the-year weakfish have appeared in Peconic and Gardiners bays during early Fall. These fish are the product of spawning which recently completed studies show takes place in our waters, principally in late May through mid-July. That spawning does occur and that the young do survive should put to rest the fears of those who hold that the hydrography; i.e., salinity, currents, water temperature and chemical nature of the water, has changed sufficiently to influence a decline in the fishery.

Another theory is concerned with the reduction in the natural food supply furnished to the weakfish by the formerly abundant grass shrimp. This decrease in the food has supposedly been caused by shrimp fishermen, who, with small trawls, capture the grass shrimp and sell them for weakfish chum and bait. Here again it is necessary to look for the answer elsewhere. Investigation of the stomach contents of hundreds of young and adult fish showed that their diet is dependent almost wholly upon the anchovy, a small bait fish, and upon sand shrimp, a slightly larger relative of the grass shrimp. It appears then that when the sport fishermen chum with grass shrimp they are offering an item of food rarely taken under natural conditions of day-to-day weakfish living.

And so, it has been necessary to turn to other fields in the hope of finding the answer to the decline in the fishery. What about the migration habits? Where do the weakfish go each Fall when they leave Long Island waters? Is it to the deeper water offshore of Long Island, or do they move to the south, as many birds and people do each year when there is a threat of cold and snow? Fortunately, an extensive tagging program was carried on in the early Thirties

An average day for the sport fishery on one of the bays of Long Island

under the direction of Robert A. Nesbit, Fishery Biologist of the U. S. Fish and Wildlife Service. His experiments demonstrated that in general the young-of-the-year fish move during late Autumn from Long Island waters to areas offshore of North Carolina and Virginia. The following Spring and Summer these fish move inshore in southern waters and range as far north as New Jersey, returning to deep water for the Winter months. The following year they move as far northward as Long Island in the Spring, and south again in the Fall. This pattern is thereafter repeated each succeeding year until their capture or natural death.

And what of the young produced in southern waters? Although the data is not yet conclusive, it appears that these fish follow a similar pattern, moving northward as two-year-old fish and older to contribute to New York's fishery. The picture, however, is by no means so perfect as these words would imply, for in 1952 one-year-old fish (eight inches in length) appeared in great numbers on our coast and during the past three years have comprised a noticeable proportion of the landings. However, it is clear that the New York fishery is influenced not only by young produced in local waters and by fishing intensity in this region, but also by the young produced in southern waters and by fishing pressures there as well. It was in this direction that the major effort of the weakfish investigation was expended.

Perhaps the most critical period of the weakfish's life occurs during the two Winters and one Summer spent in southern waters as one- and two-year-old fish. During this year and a half of its life it attains an approximate length of eleven inches (studies by the Research Unit of the Bureau of Fish have shown that a length of 8 inches is reached at age one, and that subsequent growth each year is three inches), and over this span of time, the species, ranging from eight to eleven inches, is subjected to intensive fishing pressures which could reduce the stock. Such a reduction has actually been shown to have taken place in 1945 through 1947 when the Virginia catches boomed to the highest level in history—approximately 20 million pounds in each of those years. This preceeded the tremendous decline in the New York fishery and caused speculation that these large catches were the underlying reason for our decreased landings. It has always been true that the southern market has a good demand for small weakfish, at that critical period when the weakfish is in southern waters.

These increased landings in southern waters have brought about a change in the nature of the weakfish populations on the Atlantic coast. Recent studies have shown that there are at least two populations, or stocks, present. One stock results from fish which are spawned in northern waters; the other from fish spawned southward from Delaware Bay to Virginia. These two populations have been differentiated by counts of fin rays in the dorsal fin. Analysis of fish scales has supported this two-population finding. In this study, a more rapid growth of northern spawned weakfish is reflected in the growth rings, which are spaced further apart in northern-spawned fish than in southern-spawned fish. In the past several years a study of this differing scale growth has made it possible to determine that the Long Island catch is composed *almost wholly* of northern-spawned fish. This has not always been the condition of the fishery, for in the Thirties, when weakfish enthusiasts were at their happiest peak, Nesbit carried on similar scale studies and found that 50 per cent of the catch was southern-spawned. It can be clearly seen that the increase in southern landings have, in recent years, caused a reduction in the southern stock of weakfish, as well as, in all probability, a reduction in northern-spawned fish.

It all seems to fit into a very logical picture, one which would be quite discouraging were it not for the fact that in the Winter of 1955-56 the Atlantic States Marine Fisheries Commission was instrumental in forming a Weakfish Committee to carry on a more widely expanded program of research than one state could undertake alone. Through the Commission's efforts, scientific personnel from Virginia, North Carolina, Maryland, Delaware, New Jersey and New York met to discuss the weakfish, and a program was outlined and put into effect which approaches the problem as one of interstate concern. This is an essential step forward toward intelligent management of an important fishery resource.

It is by no means an easy problem to solve even with the several states cooperating, for there are economic as well as biological factors to hurdle. But the step has been taken, as it has in numerous other fishery problems where more than one state is deeply concerned. Surely an answer to the hurdles will be reached, for the economic and recreational advantages to be gained through recovery of this fishery are obvious to all along the Atlantic coastal range of this species.

—JOHN C. POOLE,
Aquatic Biologist (Marine)

The Birch Leaf Miner

ABOUT every year during early Summer we get letters from people stating that the leaves of their birch trees are turning brown. They want to know the reason and what they can do about it

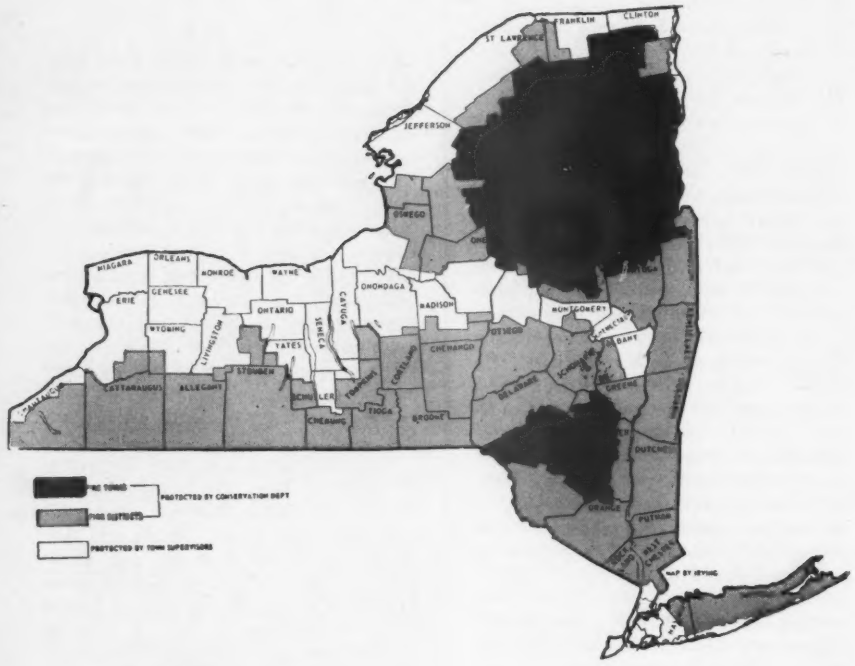
In most all cases it is the result of the work of larvae of a tiny wasp-like sawfly called the birch leaf miner, so-called because of its habit of feeding between the upper and lower surfaces of birch leaves. This insect was introduced from Europe sometime prior to 1923 and is now well established in New York State. Its favorite hosts are gray and paper birch but it will feed on ornamental birches such as the European white birch and its cut-leaf varieties.

The adult miner is a small black sawfly about ⅛" long. The larvae are small, whitish and slightly flattened—about ¼" long when fully grown. During mid-May the adults emerge from the soil where they have wintered and fly to birch trees. Females start egg laying as soon as the leaves unfold from the bud. A week or 10 days later eggs hatch and larvae begin to feed on the leaves. Within a week to 10 days they mature, chew their way out of the leaves and drop to the ground where they work their way into the soil, change to pupae, and later emerge as adult sawflies. The life cycle is short, a generation being completed in 5 or 6 weeks. There may be as many as 4 generations within a year but the first generation causes the most damage.

Damage is confined to newly developing leaves of birch and the mining out of leaf tissue by the larvae causes the leaves to turn brown. Aside from being unsightly the loss of leaves is the primary damage. Normally a healthy tree can lose part or nearly all of the current crop of leaves without being seriously injured. Repeated leaf losses, year after year, will result in death or weaken the tree.

Control may be accomplished during the larval stage but since the larvae are entirely enclosed in leaves ordinary contact and stomach insecticides are not effective. Presently one of the most effective insecticides is Lindane—one pound of 25 per cent wettable powder to 100 gallons of water. For smaller quantities use equivalent proportions. Spray when the leaves are expanded and the mines are just beginning to be noticeable. Timing is important. Repeat spray in early July for the second generation.—ROY IRVING

Fire Towns,



Fire Districts—

JUDGING by reader response to the Quiz on the Forest Preserve in our April-May issue, there is confusion in the mind of the public about two basic elements in our forest fire protection system —the Fire Towns and the Fire Districts. Perhaps the following will eliminate some of this confusion:

The total land area of New York State (excluding the five metropolitan Counties of Bronx, Kings, New York, Queens and Richmond) is 30,483,200 acres. According to the recently completed Forest Survey of New York, 14,450,300 acres, or nearly one-half of this total area, is forest land.

Approximately 13,000,000 acres of this forest land is protected against fire by the Conservation Department. Protection of the remaining 1,450,000 acres, which is generally in small isolated areas scattered throughout the more highly developed agricultural regions, is a statutory obligation of the Town Supervisors.

The Conservation Department, in order to protect adequately the 13,000,000 acres of forest land for which it is responsible, actually protects a *gross* area of approximately 22,000,000 acres. This area is classified by statute into two categories; namely, the *Fire Towns* and the *Fire Districts*—as outlined on the accompanying map.

Fire Towns: Certain towns located in the 16 Forest Preserve counties are specifically designated in the Conservation Law as *Fire Towns.* The law also requires that the Conservation Department maintain an approved forest fire protective system within these towns. Fire protection by the Conservation Department was first organized in these areas.

Fire Districts: Paragraph 2 of Section 52 of the Conservation Law provides that the Conservation Department may establish (by regulation) a forest fire protective system in such parts of the State outside of the *Fire Towns* as it may deem necessary. These areas are defined as *Fire Districts*, and have been gradually expanded over the years as determined by need and available funds.

Generally, the forested areas in the *Fire Districts* are less extensive than in the *Fire Towns.* The protective organization within the districts is not as intensive, there being fewer Forest Fire Observers and Forest Rangers per unit of area protected than in the *Fire Towns.*
—SOLON HYDE, *Supt., Forest Fire Control*

Fire Towns

Clinton County: Towns of Altona, Ausable, Black Brook, Dannemora, Ellenburg, Saranac.

Delaware County: Towns of Andes, Colchester, Hancock, Middletown.

Essex County: All Towns.

Franklin County: Towns of Altamont, Belmont, Brighton, Duane, Franklin, Harrietstown, Santa Clara, Waverly.

Fulton County: Towns of Bleecker, Caroga, Mayfield, and Stratford.

Greene County: Towns of Hunter, Jewett, Lexington, Windham.

Hamilton County: All Towns.

Herkimer County: Towns of Ohio, Russia, Salisbury, Webb.

Lewis County: Towns of Croghan, Diana, Grieg, Lyonsdale, Watson.

Oneida County: Towns of Forestport and Remsen.

St. Lawrence County: Towns of Clare, Clifton, Colton, Fine, Hopkinton, Parishville, Piercefield, Pitcarin.

Saratoga County: Towns of Corinth, Day, Edinburg, Hadley.

Sullivan County: Towns of Neversink and Rockland.

Ulster County: Towns of Denning, Gardiner, Hardenburgh, Olive, Rochester, Shandaken, Shawangunk, Wawarsing, Woodstock.

Warren County: Towns of Bolton, Caldwell, Chester, Hague, Horicon, Johnsburgh, Luzerne, Queensbury, Stony Creek, Thurman, Warrensburg.

Washington County: Towns of Dresden, Fort Ann. Putnam.

Fire Districts

Albany County: Towns of Berne, Knox, Rensselaerville, Westerlo.

Allegany County: All Towns.

Broome County: All Towns.

Cattaragus County: All Towns.

Cayuga County: Towns of Locke, Moravia, Niles, Sempronius, Summerhill.

Chautauqua County: Towns of Arkwright, Busti, Carroll, Charlotte, Chautauqua, Cherry Creek, Clymer, Ellery, Ellicott, Ellington, French Creek, Gerry, Harmony, Kiantone, Mina, North Harmony, Poland, Sherman, Stockton, Villenova.

Chemung County: All Towns.

Chenango County: All Towns.

Clinton County: Towns of Beekmantown, Peru, Plattsburg, Schuyler Falls.

Columbia County: All Towns.

Cortland County: All Towns.

Delaware County: All towns except Andes, Colchester, Hancock and Middletown, which are fire towns.

Dutchess County: All Towns.

Erie County: Towns of Colden, Concord, Holland, Sardinia.

Franklin County: Towns of Bombay, Brandon, Dickinson, Moira.

Fulton County: Towns of Broadalbin, Ephratah, Johnstown, Northampton, Oppenheim, Perth.

Greene County: All towns except Hunter, Jewett, and Lexington and Windham, which are fire towns.

Herkimer County: Town of Norway.

Jefferson County: Towns of Adams, Ellisburg, Lorraine, Rodman, Worth.

Lewis County: All towns except Croghan, Diana, Gierg, Lyonsdale and Watson, which are fire towns.

Livingston County: Towns of North Dansville and Ossian.

Madison County: Towns of Brookfield, De Ruyter, Georgetown, Hamilton, Lebanon, Nelson.

Montgomery County: Towns of Charleston and Root.

Nassau County: Town of Oyster Bay.

Oneida County: Towns of Annsville, Ava, Boonville, Bridgewater, Camden, Florence, Lee, Sangerfield, Steuben, Vienna, Western.

Onondaga County: Town of Fabius.

Ontario County: Towns of Bristol, Conadice, Naples, Richmond, South Bristol.

Orange County: All Towns.

Oswego County: Towns of Albion, Amboy, Boyleston, Constantia, Orwell, Redfield, Richland, Sandy Creek, Williamstown.

Otsego County: All Towns.

Putnam County: All Towns.

Rensselaer County: All Towns.

Rockland County: All Towns.

St. Lawrence County: Towns of Brasher, Edwards, Fowler, Herman, Lawrence, Pierrepont, Russell, Stockholm.

Saratoga County: All towns excepting Corinth, Day, Edinburg and Hadley, which are fire towns.

Schoharie County: All Towns.

Schuyler County: Towns of Dix, Orange, Reading, Tyrone.

Steuben County: All Towns.

Suffolk County: All Towns.

Sullivan County: All excepting the towns of Neversink and Rockland, which are fire towns.

Tioga County: All Towns.

Tompkins County: Towns of Caroline, Danby, Dryden, Enfield, Groton, Ithaca, Newfield.

Ulster County: All excepting Denning, Gardiner, Hardenburgh, Olive, Rochester, Shandaken, Shawangunk, Wawarsing and Woodstock, which are fire towns.

Washington County: All excepting the towns of Dresden, Fort Ann and Putnam, which are fire towns.

Westchester County: Towns of Bedford, Cortland, Greenburgh, Harrison, Lewisboro, Mt. Pleasant, New Castle, North Castle, North Salem, Ossining, Poundridge, Rye, Somers, Yorktown.

Wyoming County: Towns of Arcade and Java.

Yates County: Town of Italy.

Winterkill of Deer 1955-56

THE Winter of 1955-56 was, in many areas of this State, the most severe that Mother Nature had pulled out of her weather bag in some ten years. As the snow blanket deepened and temperatures ranged lower and lower there was widespread concern about the fate of top-heavy deer herds in the Adirondacks, the Catskills and in Central New York.

The Department, aided by sportsmen's groups, did what it could in a few of the critical areas to make added browse available, but mostly it was a case of hoping and waiting for the advent of Spring to check what actually happened.

Accordingly, as soon as the warm suns and rains this Spring had cleared away the blanketing snow, game research and management crews set out to intensively survey representative wintering areas throughout the deer range of the State.

In the Adirondacks, crews made a close survey of 25 known wintering areas comprising a little over 17 square miles. They found 94 dead deer. This averaged 5.5 dead deer per square mile but examination of the carcases revealed that only about 2 deer per square mile actually died of starvation. The balance—3 plus per square mile—had died from wounds received during the previous hunting season and from other causes. On the basis of a long time average these losses are remarkably low; particularly so in view of the severity of early Winter throughout that area.

But, as sometimes happens, the early season threat turned out to be a late season savior. Temperatures modified in January, February and early March and there were repeated thaws followed by freezing and heavy, persistent crusting of the snow blanket. As a consequence, deer were able to range quite freely and, most important, to browse at elevations of from 9 to 11 feet above the ground level. Thus they found food which, under normal conditions, would have been well out of their reach.

In the western Catskills and east central New York, the elements were not so kind. Starvation losses on 57 areas surveyed in this section of the State averaged 16.36 dead deer per square mile. The starvation losses ranged from 7.9 dead deer per square mile surveyed (11 areas) in Delaware County to a high of 109.87 dead deer per square mile surveyed (12 areas) in Chenango County.

With the exception of the Allegany State Park, these deer starvation losses are the highest ever recorded, anywhere outside the Central Adirondack area.

Once again "King Winter," together with inadequate browse in deer concentration areas, was responsible for the losses.

In contrast to the Adirondack situation, the repeated thaws in the western Catskills and east central counties were not compensated for by subsequent freezes sufficient to put a firm and persistent crust on the snow. Deer, consequently, were unable to range freely or to reach browse above the normal food line. Concentrations of the animals were restricted to the south-facing slopes where they soon ate everything available to them—and then starved. In Chenango County alone, survey crews, on 12 areas checked between the Villages of Greene and Norwich, found a total of 202 starved deer. And of these, 103 were found on 600 acres.

At this point, let's look back to the previous Fall. Chenango was one of 15 counties where a one day "deer-of-either-sex" season was declared the last day of the big game season. In that one day a calculated total of more than 3,600 antlerless deer was taken in the county. Added to the take of buck deer during the season, this brought the total calculated kill in Chenango County to 5,820 deer. Not only was this well above any other county in the State last season, it was among the two or three record kills of all time for any single county of the State. It takes little imagination to visualize what proportions the Winter kill would have achieved had it not been for this hunting harvest of the previous Fall.

While Chenango was most severely hit, other counties of these regions suffered heavily. In Otsego County, crews found 63 starved deer on 17 areas checked; in Schoharie County, 24 starved deer on three different check areas; in Sullivan County 32 starved deer located on 5 survey areas; in Ulster County 67 dead deer on nine areas surveyed.

In all, eight western Catskill and east central counties were spot-checked and a total of 449 starved deer were located. Of these, 9 were adult males, 49 were adult females, 139 were male fawns and 183 were female fawns. The balance, 69, were not aged or sexed.

It will be noted that the sex ratio among the fawns lost is 76 males to 100 females—a pretty good indication that when the going gets tough the doe fawns are unable to compete very successfully with their bigger brothers for an inadequate food supply.

—C. W. SEVERINGHAUS,
Game Research Investigator

The Hunter Training Program

IN 1949, the Conservation Law in this State provided, for the first time, that minors who were applying for their first hunting license must demonstrate to qualified instructors that they know how to handle firearms safely and conduct themselves while hunting in a responsible manner. Having satisfied the instructor on these points, the minor was given a certificate in qualification for purchase of his hunting license. In that first year the instructors were the Department's Game Protectors assisted by a "handful" of certified National Rifle Association members scattered about the State.

Thus was inaugurated a pioneer program (since adopted by 12 other states) responsible, at the close of 1954, in providing firearm and hunting safety instruction to more than 125,000 minors in New York. And responsible too, in materially reducing the incidence of hunting accidents in the field.

The Game Protectors, whose law enforcement and other field duties limited the time available for such instruction, were shortly overwhelmed by the demand. Sportsmen members of the N.R.A. answered the call, however, and certified as instructors by the Department, they have "carried the ball"—often, it seemed to them, as forgotten men. They received no pay (still do not), scant recognition and little thanks. But they (now more than 2,000) have and are doing a magnificent job.

Last year, the Conservation Department set out to do more toward upholding its end of the bargain.

In September we held three one-day meetings at DeBruce, Baldwinsville and Ray Brook. The interest of the instructors was tremendous and very pleasing and encouraging to us. More than 550 attended, many driving half way—or more—across the State. One chap drove from Jamestown to DeBruce, a 300-mile trip. Stanley Mate of the Training Section of the National Rifle Association conducted the morning training sessions, while the afternoons were devoted to field demonstrations.

The Conservation Commissioner announced in his speech to each group that an insurance policy, protecting all instructors and students in the event of an accident during the training program would be taken out by the Conservation Department. That policy is now in effect. It provides for a maximum of $300,000 for personal injury or death and $100,000 for property damage. This has settled a question often raised by instructors and others interested in the program and though no training accidents have occurred, such protection will ease the minds of all concerned.

The Commissioner also announced that .22 caliber ammunition would be purchased for this program, and as of January 1, such ammunition was available at the Department's District Game Protectors' offices. Since it cannot be mailed, instructors were urged to anticipate their needs well in advance and arrange to pick it up early in the year. A receipt is signed by the instructor for the ammunition received at the rate of 15 rounds per student. An annual report by instructors of the numbers of students trained is also required.

The Department's reprint "Firearms and Hunter Training" has been revised and brought up to date and is now available for the asking. Each instructor was recently furnished with hunting accident pictures for instruction aids. An up to date copy of the Instructor's List was sent each instructor so they might become better acquainted in the various communities as an aid to closer co-operation.

The Sportsmen's Service Bureau, 250 East 43d Street, New York City, will supply targets and other materials without cost to any certified instructor.

During the 1956 season, the Department has held meetings for instructors on a county level for closer organization, better co-ordination of work, more attention to local problems and for exchange of ideas. We have also visited many of the county federations of sportsmen's clubs to arouse their interest and enlist their aid.

The biggest problem, however, still is one of public education. In spite of local efforts to publicize training courses through sports columns, radio and T-V. announcements in schools and by posters. there seems always to be a number who demand instruction at the last minute—after all scheduled classes have closed This is a source of annoyance and discouragement to the instructors who. strangely enough, like to do a little hunting themselves. Where the program has been adequate and well advertised, instructors are not expected to give extra time to late comers. Nor should parents or their youngsters expect special last minute training. Neither should a father call the instructor as one did and say: "I've given my boy all the training he needs. Send up one of them certificates right away." He didn't get it.

Our objectives are and have been from the beginning to make hunting safer, to improve the conduct of hunters afield and thus improve landowner relations. Two thousand instructors in all parts of the State are doing their best to accomplish these objectives. Let's do all we can to help these men and women in their important work. Hunter Training does not end with the opening of the hunting season, it's a year 'round job. To paraphrase a highway slogan: "The life they save may be your son's."

—BRYAN BURGIN,
Assist. District Game Protector

EVERY *month the Conservation Department receives letters asking when, where and how new hunters under 21 years of age may take the test for their first hunting licenses. First of all, it's not simply a test—it's a training course in the safe use of firearms, hunting courtesy and farmer-hunter relations! It concludes with range work and an examination. Those who qualify are issued certificates permitting them to purchase a hunting license. There is no charge for the instruction and no minor who is a first-time hunter can legally secure a license without a training certification.*

To learn the when-and-where, the new hunter may contact a license-issuing agent, the Game Protector or a rod and gun club in his locality. The training courses are usually held in two sessions of two hours each. Some instructors, however, hold a single four-hour session and others hold short sessions with the total time adding up to four hours plus.

New hunters are urged to seek instruction well before the hunting season. Students or parents should not expect an instructor to hold special classes if they are late in applying.

Youngsters, 13 years of age who will soon be 14, may, at the instructor's discretion, be permitted to take the training; holding his certification until eligible for a hunting license.

Non-resident hunters under 21 years of age who have not had a license in their own state are required to have the training before buying a New York State license.

The instructors take their responsibility seriously. That responsibility, written into the law and on the instructor application is: "I will not knowingly certify any person who is not a safe hunter to send afield."

Hunting Accidents — 1955

THERE were more accidents involving hunters in New York State last year than during any season since 1951. This is bad, but not quite so bad as the figure for total accidents would indicate. In this respect, the only fair analysis is "number of accidents to licenses issued." Reference to these figures in the accompanying chart shows that last year's ratio, while not quite so favorable as in 1953 and 1954, is not "out of line," and actually is better than for 1951 and 1952.

What is more disturbing though, are the figures for trained vs. untrained minors involved in hunting accidents—last year, an equal number. But in view of the known effectiveness of the junior hunter training program in reducing hunting accidents among minors in the field, (records indicate the trained minor is 19 times safer than the untrained), last year's record is most disturbing.

Referring again to the known better accident record of trained minors, we may assume that a minority of untrained minors afield last year suffered a much higher proportion of accidents. However, since we have no figures on the number of trained vs. untrained minors afield, that's all it boils down to—an assumption.

What really concerns us, though, is that there should be—after 7 years of hunter training in New York—enough untrained minors in the field to pile up such a bad record.

Again, we must assume, this time without much guess work about it, that a number of license-issuing agents across the State are violating the law by granting hunting licenses to minors without certification that they have qualified under the hunter training program.

In awareness of this situation, the Department through its district offices of Law Enforcement, has instructed Protectors to call on all license-issuing clerks and agents. The Protectors are to make sure that these agents understand the provisions of the law relative to issuing hunting licenses to minors, and to further make sure, by follow-up, that they conform to these provisions.

—A. W. Bromley

ACCIDENTS re GAME PURSUED	1954	1955
Big Game	22	37
Small Game	40	42
Woodchucks	7	12
Game Birds	21	16
Waterfowl	2	4
Others and unknown	28	19
Total	120	130

CAUSES OF ACCIDENTS	1954	1955
In line of fire	48	43
Carelessness	24	23
Richocheting	14	20
Mistaken for game	15	13
Loading or unloading gun	1	6
Others and unknown	18	25
Total	120	130

MANNER OF ACCIDENTS	1954	1955
Self inflicted	23	37
Shot by companion	78	78
Unknown	19	15
Total	120	130

This man's last hunting trip. His companion climbed a fence with loaded shotgun

HUNTING ACCIDENTS

Year	Fatal	Non-fatal	Total	Licenses sold	Accident-To-License Ratio
1951	17	124	141	835,062	1 : 5922
1952	14	106	120	883,580	1 : 7363
1953	7	105	112	903,646	1 : 8068
1954	10	110	120	938,716	1 : 7823
1955	12	118	130	972,399	1 : 7480

Year	Minors Trained	INVOLVED IN ACCIDENTS Trained Minors	Untrained Minors	Adults	Total
1953	21,427	11	21	80	112
1954	24,195	23	23	85	120
1955	20,175	24	24	82	130

Small marsh ideally located near a reforested slope

Program fo

by Irving B. Stafford,

A LITTLE more than two years ago, a nationwide experiment was begun in the control of erosion, floods, sedimentation and related problems in small watersheds. There were 60 so-called Pilot Watersheds chosen on which to carry out this experiment. Four were selected right here in New York—Great Brook in Chenango County, Dean Creek in Tioga County, the Little Hoosick in Rensselaer County and Ball Creek in Chautauqua County. Much has happened watershedwise since their selection, so let's take a look at the picture as it is today.

The construction of reservoirs, debris dams and those other measures commonly thought of when flood prevention is mentioned is complete on many of the 60 Pilot Watersheds. This is true on Dean Creek in New York. Two detention dams were finished in the Summer of '55, one on Dean Creek itself and one on its tributary, Burheight Creek. These were built under Federal contract, let by the Soil Conservation Service. Easements, covering the land they occupy and the land that would be covered by water should a severe storm fill them, were secured from the landowners by the Tioga County Soil Conservation District.

Even before these dams were built, 11 timber crib, debris-catching structures had been completed across the stream itself through co-operation locally. The Soil Conservation District, the Town of Spencer, the County Highway Department and the Lehigh Valley Railroad all aided.

Already this work had undergone one severe test. In the storm of October 14 through 17, 1955, 6.41 inches of rain fell in the watershed, with 4.02 inches falling in one day, the 16th. The two reservoirs impounded water to a height of 7½ feet and 5¾ feet above normal, respectively —far less than their capacity. The water flowed out at a rate that held the stream within its banks. The debris-catchers also did their job of keeping channels clear of sediment, trash and boulders. Debris basins must afterwards be cleaned in readiness for another storm-flood, and this maintenance is furnished locally.

There is also progress on the Little Hoosick. Channel improvement, streambank protection and debris-catchers have been completely planned. One debris dam was built by local people last Fall, and operations are underway for more construction this Summer.

Interest in the Great Brook watershed continues high. Construction planned for this particular watershed is not extensive, and some of it was expected to be started this Spring. Easement difficulties, however, have delayed the work, but have not dampened the spirit of the sponsors, whose annual field day near Norwich has become a top conservation event.

A similar situation exists on Ball Creek. Lack of easements has delayed the construction program there too.

It's important to note that structures —dams, debris basins, riprap and the like—do not do the whole job of flood prevention. Equally vital is the work on the land, the soil conserving, water-holding measures like contour strip cropping, reforestation, pasture improvement and cover cropping. Farm ponds and wildlife marshes might be included, although their contribution to flood control is seldom significant.

Pilot Watersheds are experimental, and no more Federal funds can be used in them after June 30, 1958. But knowledge gained from the Pilots is proving valuable in a new program that has since come along—the Watershed Protection and Flood Prevention Act of 1954.

The approach is different under the new Act. It provides for watershed projects that are truly *local* undertakings, with Federal help added. The Act is also designed to supplement both our present soil and water conservation programs and our programs for development and flood prevention in major river valleys. It is intended to bridge the gap between these two types of work and increase the benefits of both.

The Secretary of Agriculture has been authorized to give technical and financial help to local organizations for (1) flood prevention, and (2) agricultural phases of the conservation, development, use and disposal of water. Primary responsibility has been given to the Soil Conservation Service for carrying out these provisions. Other interested Federal and state agencies may participate in any stage of watershed development.

A beginning is made when an organization or a group of interested landowners in a watershed has clearly defined the problem and taken the measure of the local interest and resources. Then, they

Small Watersheds

State Conservationist,
U.S. Department of Agriculture

Debris dam on the Little Hoosick, Rensselaer County

make application for Federal assistance. The original and one copy is sent to the State Department of Agriculture and Markets, since Governor Harriman has designated this Department to represent him and the State in this activity. Commissioner Carey, in carrying out this responsibility, consults the State Soil Conservation Committee. Meanwhile, a second copy of the application is sent to the State Conservationist of the Soil Conservation Service at Syracuse.

Project applications need to be thorough and accurate—very careful in the analysis of problems, possible solutions, economics, the strength of local interest and the resources available to do the job and maintain it afterwards. All pertinent information is urgently needed to help the state and Federal agencies in appraising requests and forming opinions as to planning or action required.

Under the new law, requests have already been received from Soil Conservation Districts and others interested in six watersheds. These are: (1) Cowaselon in Madison County; (2) Conewango in Cattaraugus and Chautauqua counties: (3) Upper Otselic in Madison County: (4) Genegantslet in Chenango County; (5) Canasawacta in Chenango County; and (6) Cowanesque in Steuben County (all N. Y.), and Potter and Tioga counties, Pa.

Field examinations made by the Soil Conservation Service, plus the efforts of other Federal and state agencies, have resulted in Washington authority to proceed with planning four of these. Plans on the Cowaselon have progressed to the point where local interests now have the opportunity of deciding upon the details of possible alternative measures which they may use to solve their problems, and of determining just how far they wish to go. Planning is also well underway on the Cowanesque. It is just starting on the Conewango and Upper Otselic. The people in the Canasawacta and Genegantslet asked that their two watersheds be considered together.

Watershed associations have formed in other locations in the State. Through them, various interests may be heard, needed information secured, and data on resources provided. Such groups can also keep everyone informed of progress.

Successful watershed projects follow careful planning and hard work on the part of many people. Experience has shown other, important essentials:

1. A significant watershed problem should exist which cannot be solved by existing programs in a timely and adequate manner. 2. Local people must want to do something about this problem. 3. There must be acceptable local sponsorship under the law. 4. Capable local leadership is necessary. 5. All agencies and groups must co-operate and participate. 6. Local people must furnish necessary lands, easements and rights-of-way. 7. The plan must be practical, feasible and economic. 8. There must be financial ability and willingness on the part of local people to construct, operate and maintain improvement works. 9. There must be financial ability and willingness of local people to get conservation measures on the land on schedule. 10. Standards must be adhered to in order to do a good job.

Interest in flood prevention has run high in New York State following disastrous hurricanes and heavy storms in recent months. We must not forget, however, that there have always been floods. We can't predict when or where they may strike. It is safe to say, though, there are many small, local floods almost every year and they may do as much damage in small areas as large floods do over a wide area. They may receive only brief mention in the news and are soon forgotten—except by the few landowners who may have lost all, or nearly all.

We need to be constantly aware of the possibility of floods, and to be prepared as best we can before they strike; prevention is far better and cheaper than total rehabilitation. No one can stop floods completely, but there *are* many ways of reducing the damage they might do. Most soil and water conservation measures applied to the land by co-operators with Soil Conservation Districts are valuable for this purpose, particularly on the headwaters of streams, while big dams and extensive stream channel and stream bank work are necessary in many downstream areas.

Now there is available, also, the co-operative Federal, State and local program made possible by the Watershed Protection and Flood Prevention Act. It is designed to place us in the best position, ever, to reduce flood damage.

Play Ball!

by Joseph J. Crowe, *New York State Department of Commerce*

OLD Mother Nature must be a baseball fan and one with a fine appreciation for the unusual. For, of all the forests in the world, she contrived only one relatively small belt with conditions just right for "growing" baseball bats—and it's just around the corner from the birthplace of the game, Cooperstown.

Although much is written daily about the game of baseball, little public attention has been directed toward the all-important baseball bat. As a consequence, widespread misconceptions are in vogue. Some of the game's most avid fans talk of a major league player "heisting a hickory" or "wielding a willow."

Don't you believe it!

He "heists" and wields a choice piece of northern white ash. And chances are it came off the southern slope of a New York State mountain.

Actually, any batter with an eye on his batting average, in the big league parks or on any of the diamonds or sandlots that carry the great American game virtually around the world, uses the particular kind of hardwood grown in only limited forest belts found in the lower Adirondacks, Catskills and Southern Tier of New York State and extending a little way into Pennsylvania. In all bats of major league quality, and in nearly all the cheaper makes, the wood used is northern white ash, preferably of second growth.

The full life-story of a major league baseball bat is an amazing chronology of exacting requirements, from its origin as a seedling to its days of crowning glory in big league stadiums. Details of the process came to the attention of the New York State Department of Commerce during a recent study of the State's wood-using industries. Visits to the timberlands where batwood is grown and logged and to a factory in the State where bats are made provide a vivid picture of an intriguing industry that supplies the vital equipment for the nationally beloved sport.

Timbermen who have grown up in the business explain that ash wood is ideal for its role in baseball. It is a hard, tough wood combining light weight with a powerful whip action Hardness inherent in the wood enables it to reverse the fastest pitched ball (pitches have been clocked at 100 miles an hour), while the "whip" lashes a stinging drive into a hit.

Actually, it takes some 40 to 50 years of growth in the quiet, secluded depths of the forest under almost unbelievably ideal conditions to produce batwood of big league quality.

The areas in which the choice ash trees grow have special attributes of soil quality, soil depth and moisture together with a climate that is neither too hot nor too cold. The tree must have steady growth from seedling to maturity, and according to the bat manufacturers, should come from the sheltered south side of the mountain. Its position on the slope is important, too. Seedlings high on a mountain are apt to mature too slowly. Slow growth develops a tight-grained wood, too heavy and rigid. It lacks the "give" that adds zip to a hit. Trees grown at too low an elevation develop too rapidly, resulting in a coarse, softer grain.

Throughout the long process of growth Mother Nature holds the fate of big league bludgeons constantly in her hands. The growing conditions in New York State are a rare gift from Nature's book. For most successful growth, succeeding Summers and Winters should be fairly uniform. If a long, severe Winter is followed by a short Summer, growth that year is stunted. A narrow ring of new growth would result. Reversal of these conditions would create a wide ring, or grain, beyond the thin

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It may be of interest to our readers in connection with the accompanying article to learn something about the amount of ash timber growing in the State, as well as the amount consumed annually for various purposes. According to the most recent statistics there are 943 million board feet of ash growing in New York forests. This isn't much, in quantity, compared to the 4½ billion board feet of maple and the nearly 19 billion feet which comprise the total of all hardwood species in the State. But from the standpoint of value, the less-than-a-billion feet of this aristocrat of the woodlot constitutes a significant portion of our hardwood timber. Current stumpage prices for ash in those parts of the State where the best ash timber is available range from $20 to $55 per thousand board feet, Doyle scale, which is slightly higher than sugar maple and is considerably higher than any other hardwood.

As to the amounts consumed, we are fortunate to have from Professor R. J. Hoyle of the Department of Wood Utilization in the State University College of Forestry at Syracuse, some figures right off the press from the pages of a forthcoming revision of the College bulletin, "Wood Using Industries of New York":

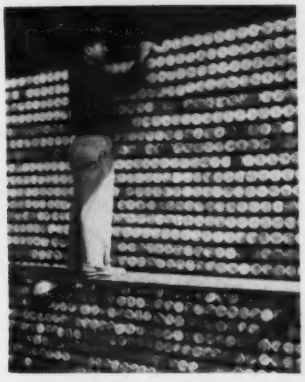
The total amount of ash used in New York annually is 18,871,000 board feet of which 61 per cent or about 11 million is produced within the State. The followni tabulation shows the approximate quantities consumed in the ten classes of products which constitute virtually the entire output:

UTILIZATION	MILLION BOARD FEET
Sporting and athletic goods (including the well-known baseball bat)	*5.181*
Furniture (mostly "Summer furniture"—made of round members)	*4.874*
Handles (mostly for agricultural tools)	*3.895*
Woodenware, novelties and turnings	*1.087*
Toys	*1.080*
Dowels (including baseball bat "blanks" turned in New York State plants and shipped out-of-state)	*.800*
Motor vehicles (primarily truck bodies)	*.470*
General Mill Work	*.432*
Ladders	*.353*
Chairs	*.160*
Total	*18.332*

Billet is shaped on lathe, calipered to proper dimension

Weight and balance is most important

Ash billets piled for seasoning at McLaughlin-Millard Co., Dolgeville



Splitting rough billets from ash logs at the Dolgeville plant

Flame-treating a bat is thought to toughen it

one, so there would be no uniformity in the grain.

Timber scouts select the specimens that have achieved the right age and size. They preserve the growth of the younger stand to the fullest extent. The tree selected for processing has a diameter of 12 to 15 inches. From one tree ordinarily 60 bats can be fabricated.

The McLaughlin-Millard Company, Inc., at Dolgeville, is right in the heart of the Adirondack stands of ash. The firm's famed "Adirondack" trade mark has been stamped on many World Series home-run-hitting bats.

The firm fells ash trees within a 40 mile radius of Dolgeville. After being hauled to the mill yard, the tree is cut into 42-inch lengths, then split by hand into pie-shaped wedges. In the mill, cutting machines shape the wedges into billets. These are stored under shelter for 18 months to "cure" the wood. Then wood lathes trim and curve the billets down to bat size and shape. In the final stages the wood is dipped in a solution that further protects the grain. The bat then emerges, smooth and shining—a precision instrument, stamped with the name of the maker, and often with the name of a particular player, ready for its mission.

Bat-makers admit to at least one fetish —to get the trademark on the "up" side of the stick, parallel with the grain. To avoid a pair of stinging hands and a possible broken bat, every youngster on his first trip to the plate gets one emphatic admonition—"Keep the trade-mark up."

A Dolgeville Little Leaguer approves the final product

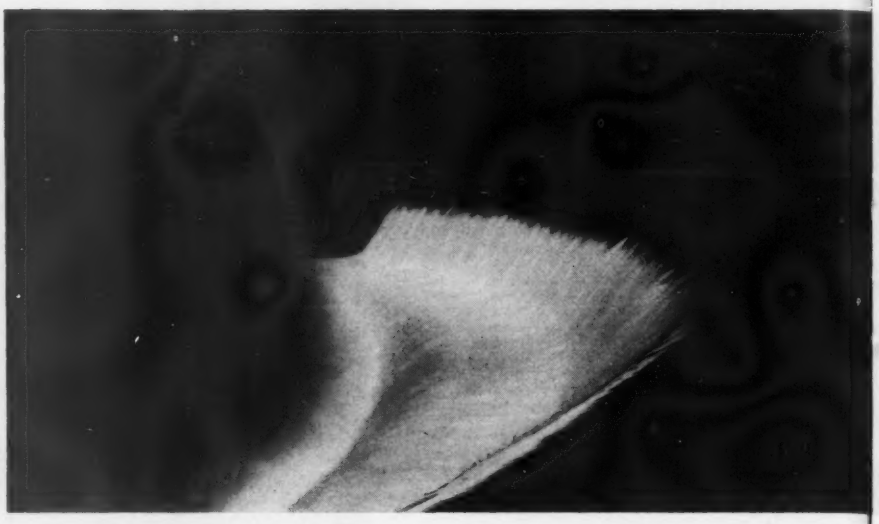
Bobby Thompson smacks the bat he used for his pennant winning home run in the 1951 race with the Giants

The Lamprey in New York Waters

NEVER has a silent, secretive, dull-colored creature caught the public eye more completely than the lamprey. From the virtual obscurity of being known only to a few fishermen and biologists the so-called "lamprey eel" has squirmed its way into a favorite subject for discussion by fish and game clubs, has touched off innumerable letters to the Conservation Department and has become a frequent choice for theme papers by school children. The recent increase of the sea lamprey in the upper Great Lakes has been widely publicized for this is a dramatic story, fraught with suspense, action and danger. By attacking the valuable lake trout resources of Lake Michigan, Lake Huron and Lake Superior the sea lamprey has proven itself a public enemy of powerful stature and a co-ordinated program to decrease its depredations is in progress with both the United States and Canada participating.

Our own New York State lamprey situation is less crucial as we have had lampreys since time immemorial. Still it is exciting enough. According to a recent newspaper in the Finger Lakes region a mother called up and said she never realized such things inhabited our waters and wanted to know whether it was safe for her children to play along the creeks as they had done last season. There is a growing tendency for our fishermen to notice every wound or scar in the hide of a fish as indicative that lampreys are getting started or to send in for identification specimens of fish leeches, which look like a small edition of a lamprey. In the relatively few of our waters where there actually are lampreys many sportsmen seem to feel that "the menace" is spreading. Fortunately there is no evidence of a general increase in New York lampreys; they have decreased in some areas and increased in others. Like all wild populations they have their ups and downs.

Before going very far into this, suppose we consider for a moment what lampreys are and how they operate. Many persons assume because of their name, that they are some kind of eel. As a matter of fact they are not even distantly related to eels, which are fishes. Lampreys belong to that class of vertebrates known as *Cyclostomes*, a group considered more primitive than fishes and having, unlike fishes, no bones or paired fins comparable to front and hind limbs. They are somewhat like sharks in having separate gill slits but they have no jaw bones. The word Cyclostome is derived from Greek roots meaning "circle" and "mouth." This sucking disc, which lampreys use in moving stones to build spawning nests in the riffles of streams and which the parasitic species use in extracting blood from fish is unique in having teeth arranged in concentric rows.



Pepacton Reservoir at spillway. More than 800 million gallons a day overflow when this photo was taken, April 18, 1956

Our New York lampreys represent no less than six species, four of which are non-parasitic. Two of them, of which the sea lamprey is by far the best known, are parasitic and feed upon fish blood.

All species of lampreys have a larval stage before transformation to the final and more easily recognizable stage. The lamprey larvae (also called *ammocoetes*) are eyeless, toothless and worm-like. They live in mud banks or similar hiding places where they can strain out small organisms brought to them by the stream and pass several years in this fashion. Unless dug out to be used as bait they are rarely seen. The various species look much alike at this stage and are difficult to identify. When about the size of lead pencils lamprey larvae undergo a transformation the most conspicuous features of which are the development of eyes and of the sucking disc. The non-parasitic species at this time also have well developed reproductive organs and do not feed after transformation. The parasitic species never are mature at transformation and they feed upon fish blood until they grow to maturity. Lampreys of both types have similar spawning habits, building nests in the gravel riffles of streams. After breeding lampreys invariably die.

As bearing upon the economic status, it is evident that the non-parasitic species, usually called brook lampreys, do no harm to fish life. This fact requires emphasis. Many persons have heard about the damage that the Great Lakes lampreys have caused and become alarmed when any lampreys are found in their vicinity. Without bothering you with details as to the relatively minor structural differences between lampreys, it is helpful to remember that the brook lampreys seldom exceed eight inches as breeding adults. If you find breeding lampreys, from April to June, that are very small they would be one of the non-parasitic species

Coming to the parasitic species, there are two in New York waters representing two genera, *Ichthyomyzon* and *Petromyzon*. The silvery lamprey, *Ichthyomyzon concolor* is pretty much of a "collector's item," being represented by only a few distribution records in New York from Lake Erie to Lake Champlain. It is relatively small, rarely over a foot long, and by reason of this as well as by reason of its few numbers is not troublesome to fish or fishermen. We should give it a passing mention though, as some of the scars noticed on fish in Lake Erie, Lake Ontario or Lake Champlain could be its trade mark. However, by far the most numerous and largest predatory lamprey is the sea lamprey *Petromyzon marinus*. From here on, suppose we concentrate on it.

The sea lamprey, like the salmon and smelt, is adaptable to life in lakes or what are generally called landlocked popula-

tions. Large, deep lakes are the preferred habitat of the landlocked sea lamprey, which is either native to many New York lakes or has been present a long, long time. Biologists at Cornell University noticed this lamprey in Cayuga Lake as early as 1875. Due to the lack of early exploration in our lakes it is impossible to be sure whether or not it was native in our waters but many of our lakes have had lampreys beyond the memory of any living observer. These include Seneca Lake, Lake Ontario, Oneida Lake and Lake Champlain. As an adult this lamprey is from one to two feet long, averaging smaller than the sea-run populations.

Recently, with the background of known spread of the sea lamprey to the upper Great Lakes, many of our sportsmen assume that the New York waters are in the zone of a spreading lamprey menace. Actually the shoe is on the other foot. We have the somewhat dubious honor of having had lampreys as early as any state. From our waters they went "that away" or, more specifically, in a western direction.

Niagara Falls, a famous cataract on many counts, also is a barrier against upstream migration of lampreys. Left to their own resources, no doubt our lampreys would have remained in Lake Ontario without colonizing the upper lakes. But, in 1833 the Welland Canal was constructed linking Lake Ontario to the upper lakes. No one can say for certain when the first pioneer lampreys used it to swim into Lake Erie but the first specimen recorded was in 1921 (J. R. Dymond). This is a big lake, mostly shallow but with a small area of deep, cold water and is not ideal for the rapid increase of lampreys. Perhaps this explains why it required many years for the invasion to reach Lake Michigan. The rapid spread of the invaders in Lake Michigan, Lake Huron and Lake Superior and its correlation with a crash decline of lake trout production is well known. These deep lakes, with many good spawning streams have shown a phenomenal build up of the sea lamprey.

Lake Erie, on which we have many miles of frontage, never produced many lake trout; hence, the correlation between lamprey abundance and decline of lake trout production is not similar to that of Lake Michigan or Lake Huron, where the former production of several million pounds of lake trout has dropped to insignificance. Careful search has shown only a few spawning streams. Lake Erie is not only the most productive one of the Great Lakes but also has a wide variety of species of fish. Fortunately, the angling and commercial fisheries of Lake Erie have shown no overall drop in abundance attributable to the sea lamprey.

Getting back again to the areas east of Niagara Falls, where lampreys are an old story, we come first to Lake Ontario which is a deep, cold lake, relatively unproductive except in its shallower parts. Lampreys have long been numerous but what their effect has been on Lake Ontario fish resources is difficult to evaluate. In view of the outstandingly productive smallmouth bass fishing of the eastern end of Lake Ontario, lampreys do not seem to be a general threat to all game fish. The lake trout, a species which is particularly vulnerable, has had its ups and downs in Lake Ontario over the years. At present an experimental planting program, in progress on a co-operative basis with Ontario and New York (CONSERVATIONIST, February-March, 1956) indicates an encouraging survival of planted lake trout.

Seneca Lake, where both lampreys and lake trout have long maintained high populations has been the scene of considerable controversy concerning the effect of lampreys. This lake whose principal inlet, Catharine Creek, is world famous for its large rainbow trout is considered a good fishing area. In fact, so numerous are the lake trout that Seneca is the principal spawn-taking area for our hatcheries. At the time these trout are netted for eggs there is excellent opportunity to observe the amount of evidence of lamprey attack. A careful study of the percentage of scarring and weights of both scarred and unscarred lake trout was published by W. F. Royce (*Transactions American Fisheries Society*, 1949). Although the scarring was very high (88 per cent) there was no evidence of any effect on the weight of the trout. These fish grow rapidly and perhaps this may be a factor since large, fast growing fish may be expected to stand the loss of blood from lampreys rather well. Moreover, Seneca Lake is heavily stocked with lake trout every year and this is considered an important factor in maintaining their numbers. Although many anglers object to seeing occasional lampreys on lake trout or to finding the healed scars of previous attack, the Seneca Lake lamprey situation does not appear serious from a fish production standpoint.

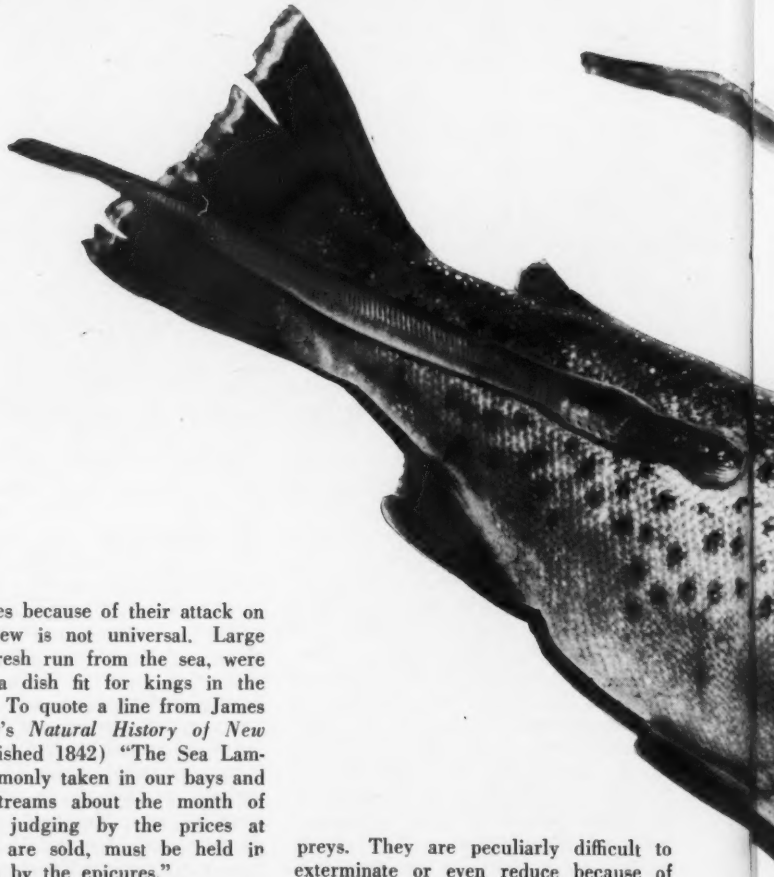
Cayuga Lake, too, has been the scene of many observations on lampreys. Their depredations on fish there resulted years ago in unsuccessful efforts by the U. S. Fish Commission and Forest, Fish and Game Commission to eliminate or reduce them by means of a trap weir. This work, in charge of Professor H. A. Surface resulted in considerable information and is reported in the 1904 report of the Forest, Fish and Game Commission (precurser of our Conservation Department). Over a long period of years much information about Cayuga Lake fish management in general and on lampreys in particular has been built up by many individuals. Professor S. H. Gage over a long period of years found the lamprey a remarkable subject for anatomical and histological studies and in the 1927 Biological Survey Report published by the Conservation Department gave a thorough round-up of knowledge on the life history and economic status. Later R. L. Wigley made the lamprey the subject of a comprehensive thesis. Meanwhile, over a long period of years progress has been made by Professor D. A. Webster and others in study of the lake trout in Cayuga Lake. To sum up the situation, Cayuga Lake has responded very favorably to lake trout planting even with some evidence of lamprey damage to trout. It also supports a productive fishery for smallmouth bass and other species.

Lake Champlain, a lake with considerable deep, cold water is recognized as an outstandingly productive fishing lake, with unusual diversity of fishing. It is not, however, a lake trout lake even though a few were reported present there in early times. It is an outstanding producer of smelt (locally called Lake Champlain ice fish). As to lampreys, this lake has a fair number.

Oneida Lake, somewhat like a small edition of Lake Erie is shallow and very productive of wall-eyed pike, bass and many other fish, mostly of warm-water type. Lampreys are by no means scarce but they do not seem to be the subject of much complaint by Oneida Lake anglers. There is relatively little deep, cold water and no lake trout are present. A species of the whitefish family, locally known as tullibee, is frequently found dead with scars of lamprey wounds. In their 1928 *Report on Ecology and Economics of Oneida Lake Fishes*, C. C. Adams and T. L. Hankinson reported eleven species as showing some evidence of lamprey attack.

As already mentioned, it is the landlocked sea lamprey in our lakes which is of most concern in attacking fish but mention should be made of several areas in New York which have sea-run populations. Salt water life must agree with lampreys as they are sometimes three feet long. The spawning runs come up the Delaware, lower Hudson tributaries and Long Island streams. The Susquehanna formerly had a similar run but dams have eliminated this migration. Delaware River bass fishermen like to use sea lamprey larvae as bait. The spawning lampreys, which migrate well up the Beaverkill and other Delaware

Lake Lamprey
Female



tributaries, attract little notice and it is remarkable that so many of these big ones can spawn and die unseen. The small recently-transformed lampreys resulting from previous spawning usually make their way to the ocean *before* feeding upon fish. They disappear from sight so completely in the ocean that comparatively few are ever seen in our waters outside of an occasional one seen by commercial fishermen handling large numbers of fish. They migrate to sea from our streams at about the diameter of a lead pencil and return almost as thick as your wrist and perhaps as long as your arm. To grow this large they must consume the blood of marine fish in some quantity. While the occasional observations of ocean lampreys on fish indicate they attack many species, including sharks, there is no evidence that they concentrate on any desirable species in particular or do any material damage, there being many fish in the sea.

A very interesting exception to normal sea lamprey behavior has recently taken place in the Pepacton and Rondout reservoirs. The run of sea lampreys formerly spawned well up in the East Branch of Delaware River. Since the completion of the Pepacton dam they can no longer do this but the transforming lampreys from previous spawning have been dropping down into the reservoir and have been attacking the large brown trout which inhabit this body of water. A part of the lampreys have run out of the reservoir via the long tunnel to the Rondout Reservoir and have attacked trout there. So far, evidence of fatal attacks on trout in these waters has been lacking; most of the scars are the work of relatively small lampreys and it is possible that these attacks represent only temporary feeding before the lampreys resume downstream migration. By reason of the long period of larval existence (believed to be 4 or 5 years in some waters but not known with certainty in the East Branch of the Delaware) several annual crops of lampreys are likely to be produced even without more spawning. It is considered unlikely that the lampreys will mature and maintain a spawning population for, in several other rivers where sea lampreys have been blocked by dams there has been no permanent landlocking of resident populations.

Although most people consider lampreys as thoroughly undesirable, repulsive creatures because of their attack on fish, this view is not universal. Large lampreys, fresh run from the sea, were considered a dish fit for kings in the Old World. To quote a line from James E. De Kay's *Natural History of New York* (published 1842) "The Sea Lamprey is commonly taken in our bays and salt-water streams about the month of April, and judging by the prices at which they are sold, must be held in high esteem by the epicures."

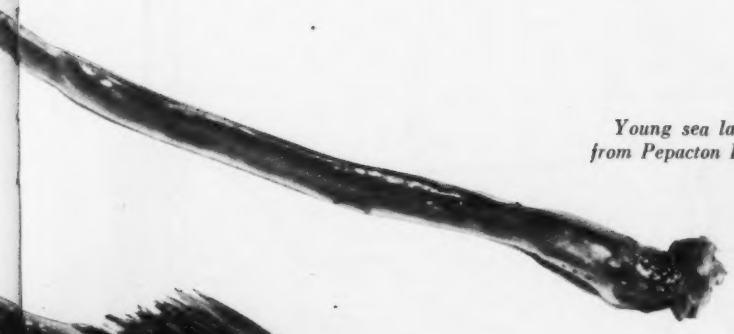
In New York waters today comparatively few persons are interested in lampreys as food but the use of the larvae as bait is popular in some areas as many game fish bite well on them. They are a lively, durable bait.

The recent drastic decline of the lake trout resource of the upper Great Lakes region and the mobilization of efforts to combat the lamprey in these waters has led to many demands that control be attempted in our New York waters. This subject is usually approached with considerable heat; many sportsmen hate the very idea of lampreys and would like to see them all killed or at least as many killed as possible. Naturally, they want action.

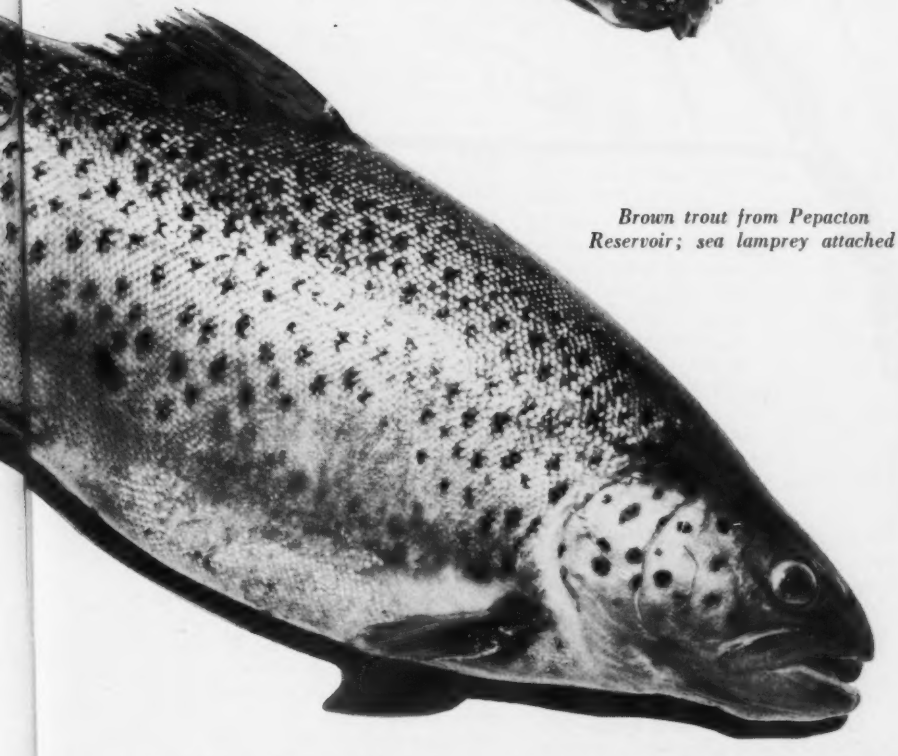
But, where the expenditure of money is involved it is desirable to evaluate very carefully what could be accomplished for the outlay of the large sum needed for any material reduction in lampreys. They are peculiarly difficult to exterminate or even reduce because of the many age groups providing a sort of "defense in depth." If you could exterminate the entire breeding population of lampreys during the current season before they can deposit a single egg you would still have immature lampreys in the lake and behind that several-year classes of larvae living in the mud.

Electric weirs, used at the mouth of breeding streams have been shown to be effective in blocking or trapping a large number of lampreys. This method does not, however, give a directly proportionate reduction. A female sea lamprey produces many eggs, about 25,000 being not unusual, and it is possible for a few breeding lampreys to produce an excellent crop of young. Cutting the breeding population in half would not necessarily cut survival in half any more than cutting out half your garden seeds would result in a 50 per cent reduction in crop.

Lake Lamprey
Male



Young sea lamprey
from Pepacton Reservoir



Brown trout from Pepacton
Reservoir; sea lamprey attached

Weirs, used with complete success for a long period of years could be expected to dry up the lampreys at the source for, when all age groups mature and are blocked from spawning grounds there would be no more lampreys. But electric weirs, like most devices are subject to troubles not the least of which is temporary failure of electric power. They are dangerous and require foolproof safeguards to protect humans and domestic animals. Moreover, the problem of stopping lampreys without detriment to game fish is a difficult one. This would be especially difficult to solve in Catharine Creek where an unobstructed run of rainbow trout is annually something for anglers to look forward to with anticipation.

Control of the immature lampreys instead of the adult egg-laying stage, is less of a win or lose proposition. Whereas, the destruction of an adult lamprey does not prevent any damage to fish life by this individual as it has already reached the end of its parasitic life, the killing of immature lampreys before they begin to feed on fish affords a means for proportionate reduction of damage. Unfortunately, the downstream migration of the recently-transformed young lampreys, now having become ready to attack lake fish, is spread out over many months from Fall to Spring. So far, devices to catch them during migration have not been perfected. However, attacking the larvae in the mud banks along streams by means of poisons is considered a fertile field for research and the U. S. Fish and Wildlife Service has discovered several promising chemicals, toxic to lampreys at concentrations which are safe for fish. Unfortunately, these chemicals are thus far very expensive. Electric shockers are somewhat successful in stirring up lamprey larvae so that they can be netted but this method is expensive in labor costs.

To sum up our New York lamprey situation: (1) Many of our waters have long had lampreys; (2) in most of these waters the situation is relatively stable although a wide variety of fish are subject to attack; (3) damage to lake trout seems possible to counteract by heavy stocking; (4) there are no methods known by which complete extermination is in sight; (5) local evaluation of the amount of damage caused by lampreys and of the costs of reducing such damage are necessary steps in the planning of any control program.

The lamprey situation should be viewed as just one phase of the whole fish management problem. After all, good fishing is the primary objective and the most important things to do are the ones that will actually help make fishing better. In most of our waters control of lampreys does not seem to be the top priority job but we could do with a few less of them than we have. The development of economical and practical methods is well worthwhile, even though we must face the fact that partial control involves an expenditure for an indefinite period.

Concentrated work on methods of control is in progress in the upper Great Lakes area and is being watched with interest. Meanwhile, we are proceeding on a program of finding out how much damage our local lampreys are doing and trying to find ways to hold such damage to a minimum.

—JOHN R. GREELEY,
Chief Aquatic Biologist

Ontario County

N. Y. S. Conservation Department Offices

District Game Manager	2130 Scottsville Rd., Scottsville
District Forester	5 E. Steuben St., Bath
District Fisheries Manager	2130 Scottsville Rd., Scottsville
District Game Protector	2130 Scottsville Rd., Scottsville

Farm Service Offices

County Agricultural Agent	Court House, Canandaigua
Ontario Co. Soil Conservation District	74 S. Main St., Canandaigua

—Roy Irving

Pond Plants

HABITAT portraits are quick to capture the attention of the viewer. In the marsh painting (center pages) perhaps the pickerel in swift pursuit of the sunfish first caught your eye, and further inspection revealed the presence of perch, the largemouthed bass, a muskrat, and one —no, two—black ducks. If there's a youngster looking over your shoulder, chances are he or she first spotted the diving leopard frog and painted turtles. Artist Wayne Trimm has portrayed a "frog's-eye" view of a small water world —a living association of animals and plants, typical of a fresh-water marsh in New York. The plants are much more than background scenery to set off the animals that quickly caught your eye: they are a basic part of this water world, contributing vitally to the production of the warm-water fishes, waterfowl, and furbearers so characteristic of this environment. These plants are fascinating in form and structure, and some knowledge of how they live and function can contribute much to an understanding and appreciation of one's favorite bass water or duck marsh. Moreover, such knowledge can provide a basis for understanding important conservation problems as well.

The flowering plants which are water inhabitants today are actually fugitives from a life on land. Their ancestors, a million years or more ago, transformed from water to land dwellers, but further along in the course of evolution some of them, still capable of continued change, decided life was easier in the water after all, so back to the water they went. However, even today many familiar varieties of field, roadside and garden plants have close relatives in water habitats. The mustard, pink, buttercup, buckwheat and grass families are all large groups of land forms, but each has a few members that live in the water. And in some groups such as waterlily, pickerelweed and pondweed, the whole family are water dwellers.

With one exception, all the plants pictured here have made this return to water. In the lower left of the marsh picture, there is one of the larger algae, stonewort or muskgrass, representative of some lower plants that never abandoned life in water.

In adapting to an aquatic existence, the different water plant species have found particular niches or growing areas available to them from the water's edge to depths of more than 20 feet in some very clear lakes. From the point where the soil is flooded, or at least saturated continuously, to depths of three or four feet the rooted marsh plants such as bulrush, spikerush, pickerelweed, and common cattail abound. These produce stems and leaves that emerge above the water's surface. Certain sedges, rushes, reeds, arrowhead, wild rice and other grasses, also may grow abundantly in the marsh zone. Structurally, these emergents look very much like land plants. However, like other rooted aquatics, they have a well-developed internal system of air canals that aid in carrying oxygen to the roots which usually are growing in bottom ooze devoid of this indispensable gas.

As one moves into deeper water from the shallows or shore area, one finds aquatics occupying both water surface and underwater depths. Floating-leaf forms, represented here by white water lilies and yellow pond lily or spatterdock, are rooted in the bottom but send up long flexible stems topped by floating leaves on the water's surface. In their life processes, the water lilies still function as land plants, but unlike the trees and flowers in your garden, their leaves have the special cells for exchanging gasses with the air on only the upper surfaces. Other floaters like the duckweeds (see the tiny green spots washed up on the log, right side of painting) are unanchored by roots and drift about on the surface at the will of the winds.

Beneath the surface, a host of submerged or underwater forms live a complete aquatic existence. The adaptations made in adjustment to this environment are marvelous indeed. Here, the need to resist bending in wind and wave is diminished and in consequence, supporting structures in the anatomy of these plants have moved from the outer portions to the core of the stem. For these varieties conserving water obviously is no problem and the tough outer covering so necessary on the leaves and stems of land-dwellers has disappeared. But obtaining oxygen in water—where obviously it's less concentrated than in air—does pose real difficulties. Thinner leaves, sometimes only a few cells in thickness; long, ribbon-like or finely divided leaf forms which have high surface area for their volume; and well developed internal "ventilating" systems, are among the modifications developed by these submerged aquatic plants to solve this problem.

If you are a fisherman, you have undoubtedly observed these characteristics of underwater plants on virtually every trip. Many's the time your lure has been "hung up" in the weeds and it seemed that the harder you pulled, the harder the weeds pulled back. Finally, if your line was new and strong, you won the battle and slowly reeled in your plug or spoon, completely lost in a mop of aquatic vegetation. Then maybe you noticed how soon the delicate leaves, stripped from your lure to fall into the boat, shriveled to wisps of natural form.

The submerged aquatics also have met the problem of reproduction in unique and interesting ways. Wild celery or freshwater eelgrass, the long leaves of which appear at the lower left of the painting, present one of the most unusual modes of all. Male and female flowers are borne on separate plants. The female flower opens on the surface at the tip of a long, coiled stalk. Under water, male flowers open, and release not simply pollen grains, but the entire stamens, laden with pollen. These have an inflated, boat-like base which buoy them to the surface and there float them about. When contact is made with a female flower and pollen transferred, the coiled flower stalk withdraws under water where fruit develops.

Non-sexual, vegetative methods of reproduction are common, too. It may be accomplished by special structures such as runners, tubers, or leaves, but in some varieties, if simply a part of the stem breaks off, it readily takes root. The latter method is known all too well for waterweed or *Elodea*, a pest in some waterways of this country and Europe, where it was introduced from here. Elodea is the specimen with leaves in whirls of three in the bottom center of the painting.

Our marsh and shallow water community is by no means static, but like other natural plant and animal associations, is ever changing. There is continual tendency for the zones of emergent, floating, and submersed plants to move lakeward, as, in the natural process of aging, silt and plant remains accumulate to make the water shallower. From the saturated soils adjacent to the marsh, a zone of wet-land plants, perhaps woody species like willow shown growing in the moss on the log, buttonbush, silver maple, and elm, encroach on the marsh as the environment becomes drier. In remote, wilderness watersheds, this horizontal lakeward shift of the community could be very slow, but in watersheds subject to flooding and silting, the process is

(Continued on page 26)

Aquatic Vegetation

of a Fresh-water Pond

Painting by Wayne Trim

Pickerel Weed
Water Lily
Bladder or Waterweed

Longleaf pondweed (Potamogeton nodosus) in 48-D marsh on Edward Klossner farm, Genesee County

(*Continued from page 23*)

accelerated. Moreover, years of drought may widen the marsh and extend submerged plants farther into open water, while periods of high water act to force the plant zones shoreward. Where shoreline slopes are steep, marsh plants may be drowned to disappear until the water receeds to normal levels.

When new impoundments are created, there is the opportunity to witness the formation of this plant community. The flooding of a three-acre P-R 48-D small marsh near Albion, Orleans County, provides a clear-cut example.

A generation ago, the father of the present owner of the site laboriously installed a tile system in this poorly-drained field by hand. The spot was cropped successfully for years, but the lines filled in and failed to function, so a dike was built there in the fall of 1950, and the marsh filled during the Winter of '50-'51. At the time of construction, a dense stand of ragweed, flourishing after an oat crop was removed, comprised the vegetation in the field. Nothing bearing any resemblance to a true aquatic was present, but in the very lowest area there were scattered seedlings of a sedge—"swamp grass"—certain evidence of poor soil drainage. By mid-Summer of 1951, the new community had begun to form. Wind-borne seeds of the narrow-leaved cattail had germinated in profusion and grown to provide cover for the brood of mallards hatched there that first year. Spikerush, another emergent, appeared, too. Its seeds are not wind-borne, but being small and light, they likely came to the site on the feet of the first spotted sandpiper to visit the new marsh that Spring.

The next Summer, the cattail cover was more dense, and among the newcomers to the plant community were floating duckweeds and two kinds of submerged poundweeds — one, Sago pondweed, a preferred food of waterfowl. Pondweed seeds are relatively large and heavy, but the waterfowl which feed on them so heavily also provide their mobility and distribute them in their droppings. The speed with which aquatics colonize new waters indicates well the mobility and aggressiveness possessed by these plants.

As with land plants, individual water forms vary greatly in their tolerance of physical and chemical conditions. The common cattail pictured here is a cosmopolitan found widely in shallow marshes; the stonewort is more restricted, tolerating hard water lakes and ponds, but absent in lime-poor waters.

Let's come back to the role the plants in this community play in the lives of the animals present. The muskrat's house is built of stems and leaves of cattails and other emergents, and their starchy roots and stems are staples in his diet. The cattails and rushes also serve as escape cover for the black ducks, and few waterfowl use it so well as the secretive female blackie with a brood. In Summer, the ducklings prosper on a diet of insects, snails, and other small animals, which ultimately depending on the plants too, thrive in myriads in the plant-choked shallows. The underside of a lily pad, for example, is a veritable small animal hatchery. You'll find it plastered with the eggs of insects and snails. An interesting tenant is the long-horned leaf-beetle which eats a hole in the lily pad from the top, then proceeds to poke its posterior through the hole to lay a double row of eggs on the under side of the leaf. Upon hatching, the beetle larvae bore into the stem of a submerged plant, and tapping the air spaces there, continue their development well supplied with air while dwelling several feet under water:

In the Fall, the duck's diet shifts to the fruit of many forms of water plants. Among them, the pondweeds, a large group represented by the submerged plants just left of center in the painting are major waterfowl food-producers over the entire continent.

Similar animal–plant dependencies exist in the case of the fishes. Pickerel and perch string their eggs in the shallows, and here too is the nesting site of largemouth bass and the sunfish. Underwater vegetation is both escape cover and feeding grounds for their fry and fingerlings. Below the water surface, plants are covered with a dense growth of microscopic algae which become "pastures" to be "grazed" by tiny water animals. Small fish, in turn, prey there on these "grazers," as the minnow is doing in the lower right of the painting.

To sum it up, the shallow water community, flooded with the sun's energy and relatively well aerated, is a tremendously productive environment. In fact, these shallows are the major life–producing segment of our fresh waters. Though the fishes, waterfowl, and fur they produce are esteemed and sought after to an increasing degree, these habitats are all too often held in low regard. Instead, they are generally considered as sites to be "improved" by filling or dredging, or be "developed" for roadbeds, factories, or farmland. An old story? Sure, but the loss of marshes and other wetland communities continues, and at an accelerated pace in many areas. We must never lose sight of the fact that the animal and its habitat are inseparable; that by no miracle of this Atomic Age can we have the product without the environment—ducks or muskrats without marshes, or perch without pond weeds.

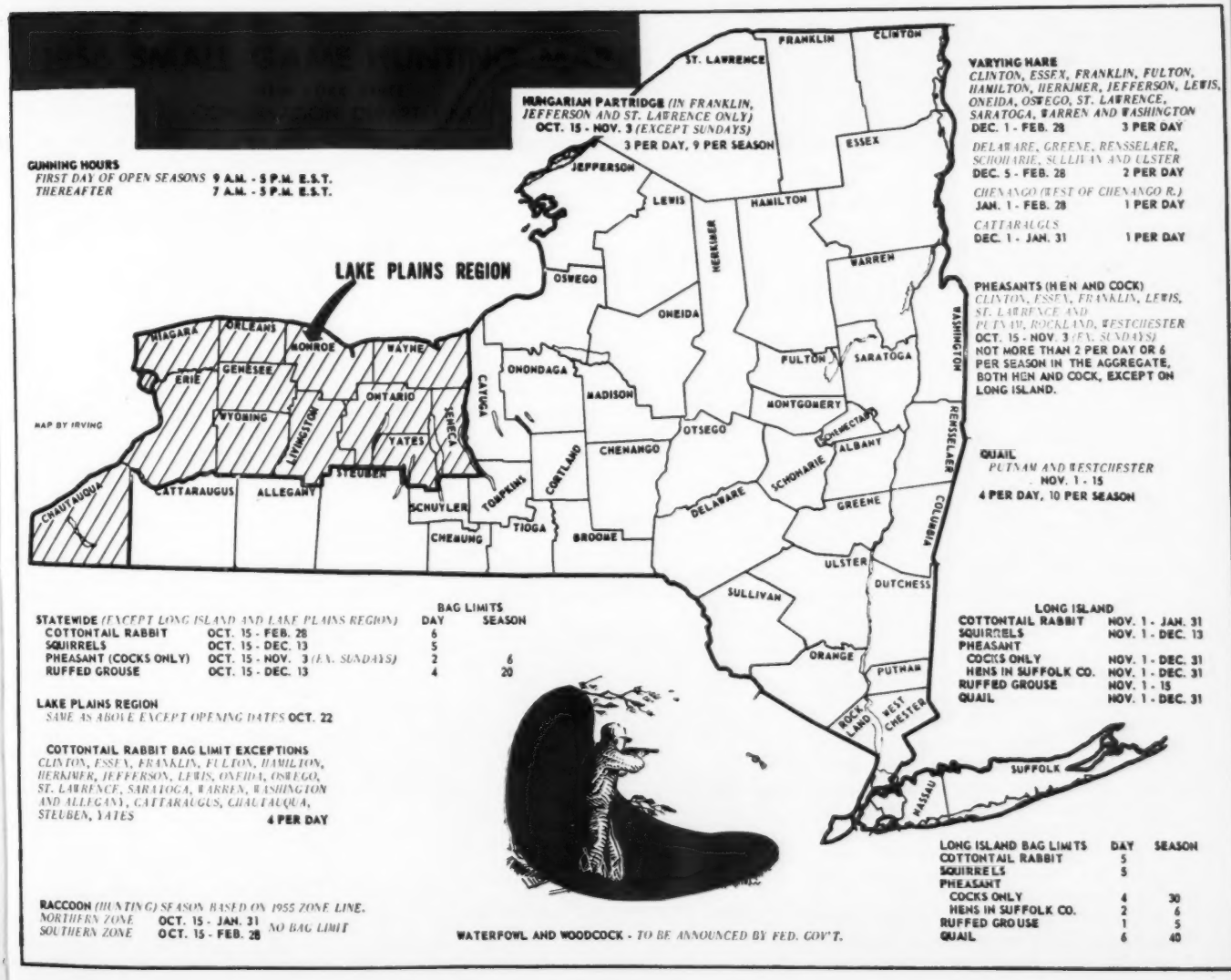
If you are a person who backs your convictions with action, work to find an alternative for the lakeshore or marsh "improvement" projects under study in your locality. And why not consider building a pond or a marsh, a shallow water community of your own—yours to culture and enjoy? Where? There are millions of acres of "abandoned" farmland across New York, and most of the soils will hold water—that's mainly why they are no longer farmed!

—Harlan B. Brumsted,
Ass't Professor, Conservation
Cornell University

In setting the 1956-57 seasons for small game with uniform opening date throughout most of the State, the Department has taken a step forward toward solving the growing problems of hunter concentration and hunter shifts. Only exceptions to uniform opening, because of agricultural and climatic conditions, are the Lake Plains counties and Long Island. This action by the Department eliminates north-south zoning and should help to better distribute hunting pressure.

But much depends upon you—the sportsman—to help preserve the American heritage of free hunting. Good relationship with the landowners is essential if the trend toward more and more posted land is to be halted and reversed. Vandalism, bad manners afield and disrespect for the landowner, his property and his rights can lead to only one conclusion—the ultimate closure of all privately-owned lands in the State to public hunting.

If we were to pick a single guide to good conduct afield it would be a reminder that a hunting license does not give one the right to go on another's private property; that is a privilege one may enjoy only at the discretion of the landowner and must be merited. Conduct yourself as though you were on your own property—and Good Hunting.



Adirondack District

GROUSE: The late cold Spring season was not favorable to early nesting but later broods are showing well. Hunting prospects are about the same as last year—fair to good in the better coverts.

PHEASANT: Good pheasant range in this District is limited to the Champlain valley and northern Franklin and southeastern Warren counties. Prospects are good in these areas. Hen-cock hunting in Clinton, Essex and Franklin counties should increase hunting success.

COTTONTAIL: Extremely limited range in this District but population trend is building up in southeastern portion.

Ontario-St. Lawrence District

GROUSE: Brood number and size smaller than last year, perhaps due to the adverse nesting season. Winter carryover less than 1954-1955. Late broods may improve the situation but prospects are not encouraging.

PHEASANT: Good range is limited to the eastern Lake Ontario basin and St. Lawrence valley. Hen-cock hunting in Lewis and St. Lawrence counties plus increased stocking should increase hunter success.

Small Game Hunting Prospects

ON July 26th, the 1956 small game hunting seasons and bag limits were announced (see Small Game Hunting Map, this issue). Generally, because of an adverse wet and cold Spring, early season production of small game was not too good. However, late broods and litters have made up some of the deficit and hunting prospects for small game this Fall appear fair to good.

Statewide, the grouse outlook is not encouraging, but the cottontail apparently will continue to provide excellent hunting. This year the taking of hen pheasants will be permitted in Clinton, Essex and Franklin counties of the Adirondack District, Lewis and St. Lawrence counties of the Ontario-St. Lawrence District, and Putnam, Rockland, Suffolk and Westchester counties of the Lower Hudson District. This should increase pheasant hunter success in these areas.

COTTONTAIL: Populations in the Lake Ontario basin in the southern portion of the District remain at a high level. Adverse weather conditions resulted in low survival of Spring litters but early Summer litters should provide good hunting.

Lower Hudson District

GROUSE: Range is limited in this District. Prospects are about the same as last year.

PHEASANT: Late nesting due to cold Spring but fairly good brood success. Prospects are about the same as last year. Hen-cock hunting in Putnam, Rockland and Westchester counties should increase hunting success.

COTTONTAIL: Early litters on Long Island. Population levels remain high throughout the District. Prospects excellent.

Catskill District

GROUSE: Broods seem to be small. Hunting prospects are not encouraging —about the same as last year.

PHEASANT: Range extremely limited in this District. Prospects about the same as the past few years. No one should travel far to this District specifically to hunt pheasants.

COTTONTAIL: Abundance remains high generally throughout the District. Hunting prospects are good.

East Central District

GROUSE: Due to the cold wet Spring, broods are scarce. Hunting prospects about the same as last year. Situation not encouraging.

PHEASANT: Populations continue to increase for the fifth successive season. Hunting prospects generally good.

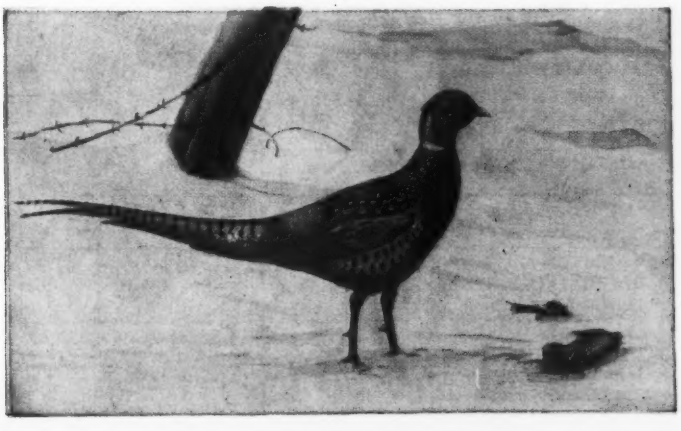
COTTONTAIL: Populations continue at a high level for the fifth successive year. Prospects excellent throughout the District.

Allegany District

GROUSE: Hunting prospects only fair in the better covers and generally not as good as last year. Late broods may improve the situation.

PHEASANT: Good pheasant range is limited in this District. Prospects in good range about the same as last year.

COTTONTAIL: Population in good range remains at a high level. Prospects are as good as last year.



South Central District

GROUSE: Population appears to be down slightly but favorable early Summer weather should result in good brood success. Prospects should be fair to good.

PHEASANT: Breeding population slightly lower than last year's high. Prospects should be good in the better range.

COTTONTAIL: High population level still prevails with only localized declines. Prospects are good.

North Central District

GROUSE: Despite the wet Spring, broods are showing up well. Prospects are about the same as last year.

PHEASANT: Poor breeding season but the late broods are showing up well. Prospects are fair—about the same as last year.

COTTONTAIL: Despite a decline in the Wintering population, production has been high and hunting prospects are good.

Lake Plains District

GROUSE: Range is limited to the fringe areas along the southern border adjoining the southern tier counties. Prospects in this area are about the same as last year.

PHEASANT: Spring breeding population was somewhat lower than normal and adverse weather during the Spring nesting season may have some loss of early nests. Hunting prospects are not quite as good as last year.

COTTONTAIL: High level of abundance continues. Adverse Spring weather did not seem to affect production. Hunting prospects are excellent.

Conservation Library

Part 4

Books on Fungi and Aquatic Plants

Part 1 of the Conservation Library appeared in the February-March, 1956 issue and dealt primarily with books for identification of animals. Part 2, which appeared in the April-May issue, listed books on trees and shrubs. Part 3 appeared in the June-July issue and listed books on herbs and grasses.

In future issues reference guides will appear on lichens, mosses, ferns, soils, minerals, and resource management.

Reading Guide: *Books are listed in the lefthand column and recommending authorities across the top. Stars indicate which specific books authorities recommend. Accompanying digests show source and briefly outline contents of each book listed.*

Books on Fungi

	*Ogden	S. *Smith	R. *Smith
COMMON EDIBLE MUSHROOMS *C. M. Christensen*			☆
THE MUSHROOM HANDBOOK *L. C. C. Krieger*	☆	☆	☆
POPULAR GUIDE TO THE HIGHER FUNGI OF N. Y. STATE *L. C. C. Krieger*	☆	☆	☆
FIELD BOOK OF COMMON MUSHROOMS *W. C. Thomas*	☆		
MUSHROOMS OF EASTERN CANADA AND THE UNITED STATES *R. Pomerleau*	☆	☆	
THE MUSHROOM BOOK *Nina L. Marshall*	☆	☆	
MUSHROOMS AND TOADSTOOLS *H. T. Güssow and W. S. Odell*	☆	☆	
FIELDBOOK OF NATURAL HISTORY *E. L. Palmer*	☆		
PLANT FAMILIES - HOW TO KNOW THEM *H. E. Jaques*	☆		
PUFFBALLS AND THEIR ALLIES IN MICHIGAN *A. H. Smith*		☆	
MUSHROOMS AND TOADSTOOLS *J. Ramsbottom*	☆	☆	

**DR. EUGENE C. OGDEN, State Botanist, N. Y. S. Museum, Albany. DR. STANLEY SMITH, Curator of Botany, N. Y. S. Museum. Albany. RALPH SMITH, Game Research Investigator, N. Y. S. Conservation Department.*

Field Book of Common Mushrooms: (1936) by William S. Thomas; G. P. Putnam's Sons, N. Y. Popular, brief descriptions, charts, glossary, recipes, poisonous ones described. Illustrated with line drawings, color paintings and photographs.

Mushrooms of Eastern Canada and the United States: (1951) by R. Pomerleau; Les Editions Chanticler, L'tee Montreal. Brief popular descriptions, very good color paintings, some line drawings and photographs, glossary.

The Mushroom Book: (1901) by Nina L. Marshall; Doubleday, Page and Co., New York. Popular, illustrated with line drawings, paintings, photographs, some in color. Bibliography. Out of print.

Mushrooms and Toadstools: (1927) by H. T. Güssow and W. S. Odell; F. A. Acland, Ottawa. Popular, illustrated with photographs, some in color. Glossary and bibliography. Concerned with Canadain species but good for many in N. Y. Out of print.

Mushrooms and Toadstools: (1953) by J. Ramsbottom. Collins, London. Popular, discusses science and folklore regarding groups treated. Some material on identification. Illustrated with photographs, some in color. Good bibliography.

Books on Aquatic Plants

	*Banks	R. *Smith	*Ogden	S. *Smith
FIELD BOOK OF PONDS AND STREAMS *A. H. Morgan*	☆			
FRESH WATER BIOLOGY *H. B. Ward and G. C. Whipple*	☆			
AQUATIC PLANTS OF THE UNITED STATES *W. C. Muenscher*	☆	☆	☆	☆
A MANUAL OF AQUATIC PLANTS *N. C. Fassett*	☆	☆	☆	☆
GRAY'S MANUAL OF BOTANY *M. L. Fernald*	☆		☆	
NEW BRITTON AND BROWN ILLUSTRATED FLORA OF THE NORTHEASTERN U. S. *H. A. Gleason*	☆		☆	

**DR. HARLAN P. BANKS, Head, Department of Botany, N. Y. S. College of Agriculture, Cornell University. DR. EUGENE C. OGDEN, State Botanist, N. Y. S. Museum, Albany. DR. STANLEY SMITH, Curator of Botany, N. Y. S. Museum, Albany. RALPH SMITH, Game Research Investigator, N. Y. S. Conservation Department.*

Fieldbook of Natural History: (1949) by E. Laurence Palmer; McGraw-Hill Book Company, Inc., N. Y. Nearly half of this book is devoted to plants, including fungi, and their identification. Illustrated with line drawings, excellent for beginners in Natural History.

Plant Families—How to Know Them: (1941) by Harry Edwin Jaques; Wm. C. Brown Co., Dubuque, Iowa. Key for beginners, illustrated with simple line drawings. Easy to use but limited in detail.

Puffballs and Their Allies in Michigan: (1951) by A H. Smith; University of Michigan Press, Ann Arbor, Mich. Semi-popular; best treatment available of puffballs, earthstars and stinkhorns. Illustrated with photographs. Many species discussed are found in New York State. Bibliography.

Common Edible Mushrooms: (1947) by C. M. Christensen; University of Minnesota Press, Minneapolis. Good illustrations and descriptions, currently available. Some pictures in color.

The Mushroom Handbook: (1947) by L. C. C. Krieger; Macmillan Co., New York. Essentially the same as the following, also out of print, available in many libraries.

Popular Guide to the Higher Fungi (Mushrooms) of New York State: (1935) by L. C. C. Krieger; New York State Museum, Albany. Descriptions and illustrations, some color photos, of the common mushrooms of New York. Good, but out of print. Available in the larger libraries.

Books on Aquatic Plants

Field Book of Ponds and Streams: (1930) by Ann Haven Morgan; G. P. Putnam's Sons, N. Y. Beginner's book of fresh water plant and animal life. More than 300 illustrations, many in color. Adequate and interesting text; bibliography.

Fresh Water Biology: (1918, reprinted 1943) by Henry B. Ward and George C. Whipple; John Wiley & Sons, Inc., New York. For many years the standard reference on fresh-water life. More than 1000 pages with many hundreds of line drawings of unicellular plants, animals, aquatic worms, crustacea, mollusca and aquatic vertebrates. Short list of references at end of each chapter.

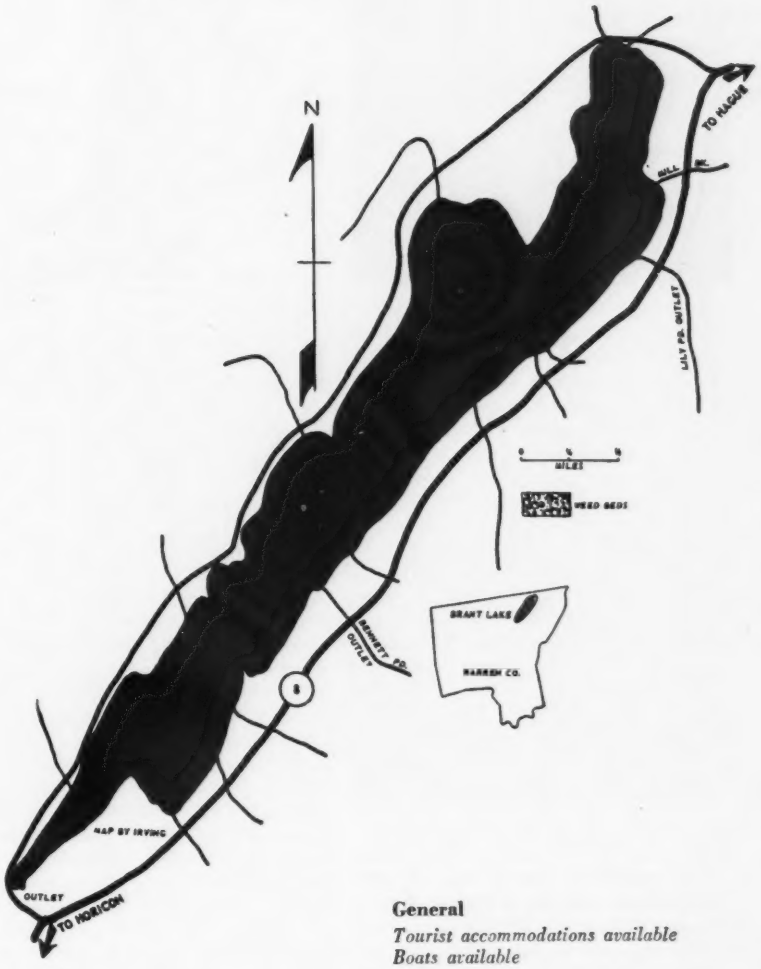
Aquatic Plants of the United States: (1944) by W. C. Muenscher; Comstock Publishing Co., Inc., Ithaca, N. Y. Identification keys, numerous line drawings, brief habitat descriptions and distribution by states of plants normally starting and continuing growth in water in the U. S. technical.

A Manual of Aquatic Plants: (1940) by Norman C. Fassett, McGraw-Hill Book Co., N. Y. Technical keys to identification of plants normally found growing in the water in the Northeast, in sterile, flowering or fruiting condition. Numerous line drawings to show diagnostic characters. Brief summary of use of aquatic plants by wildlife. Technical.

Gray's Manual of Botany: (1950) 8th Edition (Centennial). A Handbook of the Flowering Plants and Ferns of the Central and Northeastern U. S. and Adjacent Canada, by Merritt L. Fernald; American Book Company, New York. For more than 100 years and through its eight editions this has been a standard reference work for flora of the northeast. More than 1500 pages. Some line drawings and a good glossary.

The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada: 3 vols., (1952), by H. A. Gleason. New York Botanical Garden, New York. Easily used reference for identification of flowering plants with many accurate drawings in black and white. Suitable for amateur and professional.

Brant Lake



General
Tourist accommodations available
Boats available

Location
Northern Warren County, five miles northeast of the Village of Chestertown

Physical Features
Area: 1,357 acres
Maximum depth: 60 feet
Elevation: 801 feet
Length: Approximately 5 miles
Maximum width: Approximately 1 mile

Chemical Characteristics
pH: Surface—alkaline
deeper waters—acid
Oxygen: Excellent, except for deepest waters

Hunting in Vicinity
Deer
Grouse
Bear
Snowshoe Rabbit
Bobcat

Fish Present
Brown bullhead
Chain pickerel
Yellow perch
Pikeperch
Smallmouth bass
Largemouth bass
Yellowbelly sunfish
Pumpkinseed
Rock bass
Golden shiner
Bluntnose minnow
Banded killifish

Fur Bearers in Vicinity
Beaver
Otter
Mink
Raccoon
Muskrat

—Robert G. Zilliox

the back of the book

Cedar rust

Earlier this Summer we received a letter from a property owner in Ulster County inquiring about a yellow-orange, jelly-like mass growing on his red cedar trees. He described these growths as about the size of golf balls with many finger-like extensions. He wondered, to begin with, if these masses were a normal part of the tree's growth cycle—and of this he has his doubts. If not, he went on, he wanted to know what they were and if a disease, how he could combat this condition.

This is a situation upon which we get several inquiries so we hied ourselves to the authorities and came up with some pertinent information on the subject from the State College of Forestry at Syracuse.

The "Golf ball like growth" is described as a result of a fungi disease called cedar rust. No serious harm ordinarily is done to cedars by the presence of these fungi although unusually heavy infections may retard the growth or occasionally kill eastern red cedar.

Cedar rust fungi require an alternate host to complete their life cycle. Various junipers and cedars are the coniferous hosts and the alternate broadleaf hosts include such species as hawthorn, mountain ash, chokeberry, June berry, pear, quince and members of the apple group.

Red cedars and junipers can be protected by a fungicidal spray composed of one gallon of Elgetrol mixed with 100 gallons of water. Bordeaux "180" has also proved effective. Two applications one week apart are recommended. First application should be made when the yellow jelly-like formations occur.

It will be noted above that this fungi completes a part of its life cycle on broadleaf species. In this connection the University cedar rust bulletin includes information on control procedure to protect broadleaf hosts.

The cedar rust leaflet providing this information may be secured free of charge by writing "Tree Pest Information Service," N. Y. College of Forestry, Syracuse 10.

More about striped bass

Sportsmen, commercial fishermen, legislators and officials gathered at Montauk, Long Island early in June this year for the first of two on-the-spot conferences and field trips on the striped bass problem to be held as a part of its studies, by the Joint Legislative Committee on Revision of the Conservation Law. The second conference will be held this Fall.

At the outset, Assemblyman Leo A. Lawrence of Herkimer, Committee Chairman, explained that this study is the result of the request made by the Assembly Standing Conservation Committee during the last session (see text of the statement issued by the Committee—THE CONSERVATIONIST, April-May, 1956, pg. 33). In commenting on the meeting Chairman Lawrence said:

"This combination field trip and conference gave the members of our legislative committee a wonderful opportunity to get first hand information about this highly controversial problem. We were much impressed by the co-operation we received from sports anglers, beach seiners, charter boat captains and others having a keen interest in this problem. We were also most grateful for the technical information supplied by Dr. Edward C. Raney of Cornell and the Fish and Wildlife Service, and Dr. W. Mason Lawrence representing our own Conservation Department.

"I think it is highly significant that for the first time representatives of the surf casters, the commercial fishermen, the charter boatmen, legislators, and the Department joined together for a thorough study. I am hopeful that following the next meeting which will be scheduled during the height of the annual Fall migration of the striped bass, that the committee will be able to suggest proper legislation in this field. In the meantime, those of us on the committee are keeping an open mind, and are gathering all the best information we can find."

The conference program included talks by Nichols W. Griek, Secretary-Treasurer of the Long Island Fishermen's Association, representing the beach seiners; Charles Petrzelka, President of the Sportsmen's Marine Council; and Gerry Ruschmeyer of Montauk, representing the charter boat captains.

In addition to Chairman Lawrence, the Joint Legislative Committee was represented by Senator John H. Cooke of Buffalo, Senator Robert McEwen of Ogdensburg, and Assemblyman Harry J. Tifft of Chemung County. Assemblyman Edmund Lupton of Suffolk County and Assemblyman John Burns of Nassau County also attended.

Melanistic snowshoe

Even snowshoe rabbits have "black sheep in the family"—as shown here in a picture of a melanistic phase hare in contrast with a typical specimen.

The black hare was one of several snowshoe rabbits live-trapped on the Pine Camp area of Jefferson County and restocked in the Town of Henderson, same county, during the Department's trapping and transfer program.

A Guide to bow hunters

With the increasing numbers of bow hunters in the State there is growing interest in archery seasons and the regulations that apply to this sport. Here is a summary of this year's archery laws, both old and new, that pertain to the bow-hunter.

General

During the 14 days prior to the regular big game season in those counties or parts thereof in which deer may be taken by use of firearms the holder of a special archery license may take, by use of the long bow only, a deer of either sex, antlerless or antlered and, where there is an open season, one black bear one year old or older — except in the Adirondacks where a bear of any age may be taken. While hunting big game under the special archery license the possession of any firearm is prohibited. If the archer has not taken a deer during the special archery season he may continue to hunt antlered deer with the long bow during the regular big game season under the special archery license but is subject to the same regulations regarding legal game as the gunners.

The fees for the special archery license are as follows: Citizen-resident, $5.25; citizen non-resident $10.

A citizen non-resident archer may be issued the non-resident special archery license without buying the non-resident regular hunting license. The citizen non-resident who hunts big game in New York State with a gun must have the non-resident regular hunting license and the non-resident big game license.

The citizen-resident archer must have a regular hunting or combination hunting and fishing license to take any small game with the bow and arrow.

The citizen non-resident must have a citizen non-resident regular hunting license or citizen non-resident regular hunting and fishing license to take small game with a bow and arrow.

Minors

A minor between the ages of 14 and 16 may be issued a regular hunting license to take small game only provided his application is made in person with a certificate of successful completion of the Junior Hunter Training Course, or provided he presents a previously issued hunting license, and is accompanied by a parent, guardian, or other adult authorized in writing to represent the legal guardian who must also sign the license.

Minors between the ages of 16 and 21 may be issued a hunting license, combination hunting and fishing license, regular big game license and the special archery

license by presenting to the issuing agent the above mentioned hunter training certificate or a previously issued hunting license. This means that all new hunters, *including bow hunters,* under the age of 21 must have satisfactorily completed the Junior Hunter Training Course. Even for the special archery license alone the Junior Hunter Training Course must be successfully completed.

The use of explosive heads or shafts for the taking of any game is prohibited. There are no limitations on equipment for the taking of small game except for the explosive head or shaft. Big game kills should be reported to the Conservation Department on the self-addressed, postage-paid card attached to the license within five days after the close of the season in the zone where the animal was taken. These reports are important research tools and help form the basis for future big game management in the State. Moreover, failure to report is a violation of the Conservation Law. The license stub for attaching to the big game kill must be filled in with ink or indelible pencil.

Legal Notes

If an archer is afield after dark with a flashlight or spotlight his bow must be unstrung. Road hunting or shooting from or across public roads is unlawful. Only *one deer* and *one bear* may be taken during any one calendar year by each properly licensed hunter.

Wildlife shall not be taken by use of a crossbow, or the use of a device commonly called a spear gun.

Small Game Seasons

See announcement, page 27 this issue.

Big Game Seasons

Special Archery Season: The 14-day period *immediately prior* to opening dates of gunning seasons listed below.

Northern Zone: Gunning season, Oct. 25-Nov. 30.

Southern Zone: (Gunning season)
Catskill and Eastern—Nov. 19-Dec. 4 (Except bear season in Delaware, Greene, Sullivan, Ulster. Ends Dec. 19.)
Central and Western—Nov. 19-Dec. 1 (no Sunday gun hunting).
Westchester County — (Long bow only) Nov. 15-Dec. 15.

Tackle

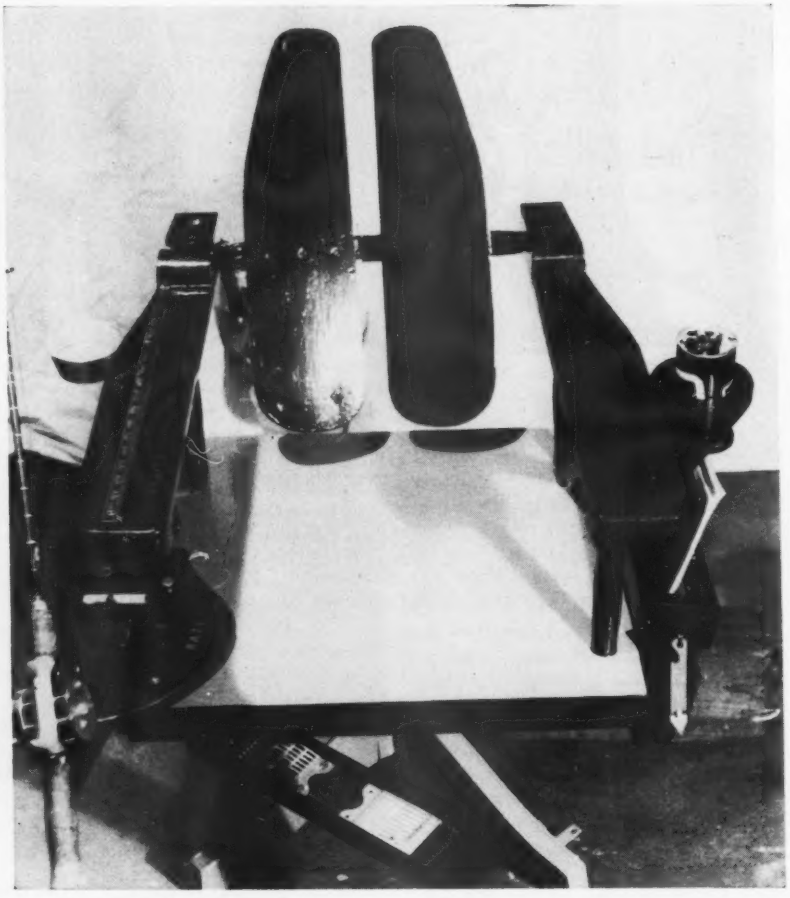
For the taking of big game the bow must be capable of shooting a hunting arrow at least 150 yards. The hunting arrow used in hunting big game must be equipped with a head having at least two sharp cutting edges measuring not less than 7/8 of an inch wide.

Stranded orioles

Because of structural failure of an oriole nest on their property, the Richard Harringtons of Slingerlands wound up Spring as god-parents to two baby orioles. Just after hatching, the Harringtons reported, the bottom fell out of the nest dumping five pin-feathered young on the ground. The fall was too much for three of the youngsters but two survived and were provided a straw-filled cardboard carton as supplemental housing. Continuing their god-parently duties, the Harringtons dutifully placed the "boxed" orioles beneath the nest tree each morning at 7 o'clock, brought them into the house each night. During the days the adult orioles took over, cramming a steady supply of insects down the youngsters' gullets. On June 27, the babies left the "nest" and perched in the trees and the Harringtons marked up a deed well done.

Mixed grill

A Department forestry crew during a late April inspection tour in Steuben County located a fox den with remnant tid-bits of the following on the threshold: Two skunks, one opossum, grouse feathers, rabbit fur and one calf's foot.



Conservation fishing chair

This fishing chair was conceived and constructed with the thought that if it didn't conserve the fish, it would at least conserve the fisherman. I built it during the past Winter and had a great deal of fun planning the various gadgets to put on it. I wanted as many of the conveniences as possible but still wanted them to be practical and useful. As you can see by the photograph, it contains only the barest essentials for conservative fishing, nothing fancy.

This chair is to be used on a northern New York lake. It will be bolted near the end of a pier, around which, I hope, the larger bass and trout will gather. If the fish are as curious as my fisherman friends there should be "Swimming Room Only" around that dock.

I started out with the base of a swivel office chair and mounted a seat on this base. The seat is 22 inches wide by 20 inches deep. It could be made larger of course if the occupant was of more generous proportions. Four spindle supports for the arms were turned on the lathe and set in holes bored in the seat. A diagonal wooden brace 1 x 1¼ inches between the spindles provides additional strength so that the fisherman can lean back with safety. The arms are of 1 x 4 inch hard wood, 24 inches long. A small wooden block is screw-fastened to the underside of the front of the arms and rounded to provide a comfortable hand grip. At the back of the arms two blocks are attached to the top of the arms. One of these blocks has a 1 inch hole in it, while the other has a 1 inch slot to hold the back rest. The back rest consists of two pieces of ¼-inch marine plywood, 19 inches long, by 5 inches wide, screw-fastened to a yoke which pivots in the hole and slot at the back of the arms. The yoke of the back rest is curved backward about two inches from the center axis so that the rest is more comfortable. This type of back rest is used on some kyacks and is very comfortable. It tilts independently of the seat of the chair and supports the entire back at any angle desired.

On the right front arm spindle is a bracket 15 inches long that swings on two iron straps passing around the spindle and screw fastened to the bracket. On the end of this bracket is attached an adjustable rod holder. This can be purchased in most sporting goods stores. On this bracket is a shelf of plywood with a hole in it of the correct size to take a small tin can to hold worms. I used a small tuna fish can that has a small flange at the top to prevent it from falling through. A cover of plywood is pivoted over the can to protect the worms from the sun. On this bracket also is a V-shaped piece of plywood to hold a cigarette. I didn't feel that an ash tray was needed.

Under the right hand side of the seat is a pivoted wooden tray, 16 inches long, three inches wide and one inch deep. This contains a hook holder, sinkers, flies and leaders. This can be swung out for use and then pushed back under the seat where it is out of the way.

On the top of the right arm rest I fastened a section of a yard stick and indicated the minimum legal length of the various varieties of fish in the area. In my case brook trout, lake trout and bass. I used gold transfer letters for this as I am no good at lettering. I also put the name of the camp on the front of the seat, varnishing over the letters to protect them.

After measuring the fish your hands naturally get some slime on them so I pivoted an aluminum soap dish under the right arm rest far enough back so as not to interfere with the pole bracket when it is swung back under the arm rest. The soap dish was originally a child's sauce pan. I removed the aluminum handle and screwed a wood handle in its place. This is more rigid and makes it easier to swing back under the arm rest when not in use. After washing my hands, I would need a towel so I fastened a towel ring on the back end of the right arm rest.

On the left hand side of the seat is screwed a magazine rack, 14 inches long, 9 inches high and 3 inches wide at the top. Sometimes the fish don't bite as frequently as they might and a magazine helps to pass the time between bites.

On the front of the magazine rack is a cup hook which holds a hook disgorger, bottle opener and any other necessities desired.

Under the left arm rest is a pivoted arm 10½ inches long with a 2¾ inch hole in the outer end. A U-shaped piece of metal holds a wooden base 2½ inches under this hole. This size hole will accommodate a bottle, can or glass of your favorite beverage. When not in use this arm pivots back under the arm rest.

Angle irons are attached to the legs of the chair so that it can be fastened to the pier.

I considered a sun shade but there is too much wind where this chair is to be located so that I didn't think it advisable. One could be easily added if necessary.

I sprayed the iron springs and swivel

mechanism of the chair with plastic to prevent rust.

The chair is painted with gray legs, the seat and back green, the pivoting brackets red. I didn't want anybody to miss them.

I am sure that this chair will satisfy a long felt need in my life. I enjoy "Roughing it" when I go fishing.—FRANCIS C. SHAW, M.D., *Director, Dannemora State Hospital*

Ed. Note: A late report from Doctor Shaw states:

"The chair was installed, with due ceremonies, and I am happy to report that within the first thirty seconds of its use I caught a fish. Since then it hasn't quite kept up that record but it is producing a very satisfactory number. From my experience so far I find that the smaller fish are more inquisitive than the larger ones. I haven't had to use the outer end of the measuring stick as yet, but like most fishermen I expect great things—tomorrow."

Remember when Trudeau's "Little Red Cottage" adorned the TB Yule Seal? (From the Neefus Collection, Hudson.)

More on Trudeau

Word has come that Trudeau is to be sold. Our announcement (February-March, 1955) that the well-known sanitarium was closing brought expressions of regret. Our hopes were revived when it was reported a few weeks ago that the Trudeau Foundation planned to continue and possibly expand lung research work at its two laboratories at Saranac Lake. But now Dr. Francis B. Trudeau, Jr., chairman of the board of trustees, says that a national real estate clearing house has been asked to find a buyer who will put the famous landmark to its highest and best use in the service of humanity.

The sanitarium, a unique private institution which waged a 70-year fight against tuberculosis, is valued at about $2,500,000 but can be bought for $750,000. Its more than 50 buildings cover over 90 acres.

Trudeau closed a year ago last December when trustees decided that the marked reduction in the number of deaths from TB, progress in surgical and drug treatment and improved public facilities made continuation of the institution unnecessary.—ROLAND B. MILLER

Duck banding co-operative

During the last two years, the New York State Conservation Department, the U. S. Fish and Wildlife Service and the Canadian Wildlife Service, in a co-operative program, have banded more than 4,000 ducks on Canadian breeding grounds (see THE CONSERVATIONIST for December-January, 1955-1956). The return of bands by hunters and the recapture of these birds at other banding stations along their migration routes will provide important added information on seasonal movement, migration patterns, utilization of wintering grounds, hunting pressure and allied data of value in establishing seasons and bag limits, acquisition of flyway refuges and otherwise managing our waterfowl resource.

To date, this co-operative banding program has been restricted, in the Atlantic flyway, to the marshes of southern Ontario, Canada. This Summer, however, the State and Service biologists will move north to the more remote James Bay area in Ontario. During July one crew will set up for business on Charlton Island in southern James Bay. In August it's planned to shift trapping operations to Pisquanish Point in the same general territory.

Scattered band returns to date indicate that many of the black ducks funneling down through New York each Fall originate from this James Bay breeding ground.

This year's banding project will continue through September 15.

Report from California

The California Department of Fish and Game in 1953 completed an evaluation of stream improvement devices constructed eighteen years previously. They had been constructed with Civilian Conservation Corps labor and are comparable to similar efforts in New York State. Typical structures include masonry dams, loose-rock dams, earth dams, board dams, log dams and log deflectors.

We are presenting California's findings and conclusions which can, in general, be applied to New York State conditions. Of 41 structures installed on one stretch of stream in 1935, only ten structures remained in operation after 18 years of service. These were log structures while all other types had washed out. Most failures resulted from end cutting and undercutting action of the water on loose bottom and bank materials. Earth dams had washed out the first year, a masonry dam was undercut and had collapsed the second year, the only board dam was left inoperative by end cutting and all rock dams had washed out by 1953.

From this it would appear that simple log structures are the most practical and enduring type to build. To last, however, these should be well-built and securely anchored (See "Straight Log Dam," CONSERVATIONIST, A-S, 1955). Every attempt should be made to construct them where natural bracing, such as trees or large boulders, is present. They should be built well into the banks and anchored with large rocks. In California in most cases, willows and other rooted vegetation were present at the extremities of the structures which had remained over the years. Apparently the planting of willows is good practice to provide additional anchorage as well as a source of food and cover for trout.

W. E. Petty

Another patriarch of the Adirondacks has passed on to his reward. W. E. Petty, member of that fast vanishing hierarchy of Adirondack guides, and father of three Department men—William, District Forester, Saranac Lake; Clarence, District Ranger, Parishville; and Archibald, District Fisheries Manager, Oxford, died in his boat on Upper Saranac. He was 93.

Born in Crown Point, Mr. Petty went to the Adirondacks in the early 1890's, working as a guide as a young man for the Rockefellers and Guggenheims, among others. For nearly 60 years he had been caretaker at Deer Island camp. He had set out to row across from the Island to Rustic Lodge landing at Indian Carry when death overtook him. His sons, William and Clarence, found the boat blown in on the east shore of the lake.—ROLAND B. MILLER

Like many of the old guides, Mr. Petty was a devotee of the Adirondack guide-boat. "He thought there was no other craft like them for general dependability," his son, William told me. "In fact, on the afternoon he passed away there was a good stiff southwest wind blowing and he and the boat both weathered the storm, which saved a considerable amount of search had the boat overturned as some of them do of other types."—R. B. M.

Custodian's camp, Morehouse Lake, 1896

We are indebted to Don Fenner, Herkimer, for the fine old picture above. He came upon it rummaging through an album. We have found, in the New York Forest Commission's Report for 1893 some pretty complete information on the Morehouse Lake Club where this custodian's cottage is situated. The report reveals that the Club was organized in 1889; that they had 1,662 acres of land situated in the "Morehouse Eight Thousand Acre Tract" in the Town of Arietta, Hamilton County. Morehouse Lake itself is described as being the headwaters of East Canada Creek, and speckled trout, the report adds, were the only fish that inhabited these waters. The report further says that nothing has been done in stocking the lake thus far (1893) because the fish have been abundant and there is no indication that the supply is diminishing.

It then quotes from the club by-laws as follows: "No member or guest may take away, for his own use, more than ten pounds of fish in any one year. No timber can be cut within ten rods of the lake. Where timber is cut for firewood or building purposes, the brush must be carefully piled at the expense of the party for whom the trees are cut, and this, together with useless tops, is to be burned at a safe and proper time. Members or guests are also prohibited from bringing any dogs on the premises except during the hounding season."

It will be noted from these by-laws and from the picture that this was an era prior to the buck law in this State when hounds were still used in the hunt. It also helped, it appears, to carry a pipe, wear a black felt hat and a flowing bow tie.

Pintails

This Spring, for the tenth straight year, a pintail duck successfully brought off a brood of baby pintails on Little Galloo Island about 12 miles off Henderson Harbor in the eastern end of Lake Ontario.

John Wilson, District Game Manager for the Conservation Department, who has been keeping tabs on the area, points out that this is quite a record for a species that so rarely nests in New York State.

"Super-stimulation"

German ornithologists, borrowing a British idea, have the birds working for them to control forest insect pests.

In Britain, the idea is called "super-stimulation" and according to a dispatch to the *New York Times*, involves offering birds ideal homes in the form of different kinds of nesting boxes. The British found that provision of a few additional nesting boxes resulted in extension of the breeding range and population of the pied flycatcher, a locally rare bird.

German ornithologists, figuring that if a few nests helped a little, more nests should help a lot, went into the business on a wholesale basis. Selecting a 61-acre "insect infested" birch-pine forest area near Frankfort, they installed more than 1,000 nest boxes, bags and bowers woven out of pine branches.

Before this avian housing development got under way, the bird population in the area was three pairs to each two and one-half acres. Within a year following installation of the bird houses, the figure had risen to 24 pairs and eventually the bird population climbed to 44 pairs per each two- and one-half-acre unit of area.

Cars are killers

Every driver has seen bloody smears on the highway, torn bits of fur, scattered feathers—the remains, maybe, of a rabbit, pheasant or skunk. What is the total highway kill? Nobody knows, but Game Protector Frank Ely of the Rochester Law Enforcement Division has a partial answer.

Protector Ely who patrols the Townships of Avon, Livonia, Conesus, Springwater, West Sparta and Ossian in Livingston County logged a total of 20,363 miles of driving from April 6, 1955, to last April 6. Like all drivers he saw plenty of wildlife dead on the road, but unlike most, he kept a careful, day-by-day, record. Following is his tally: Rabbits, 169; skunks, 51; opossums, 54; woodchucks, 50; cats, 45; pheasants, 35; songbirds, 39; ruffed grouse, 1; gray squirrels, 14; red squirrels, 9; raccoon, 22; muskrats, 16; rats, 3; weasel, 1; fox, 1; chipmunks, 4; snakes, 3; turtles, 1 and 1 crow. The total was 519.

This is one driver's observations. There are a good many thousand New Yorkers who drive 20,000 miles or more each year and there are hundreds more townships. Discount some for duplication and then multiply for your own estimate of the staggering highway wildlife toll.

Hawaiian pintails

Duck hunters in North America during the 1954-55 season took 29 pintails previously banded in Hawaii.

Memorial tree in honor of Dr. Louis E. Wolf. The tree was planted on Arbor Day, 1956 by members of the Men's Garden Club of Rome at the Rome Hatchery where Dr. Wolf, prior to his death last year, had served as fish pathologist for the Conservation Department.

Redheads

As part of the Department's program to encourage the nesting in New York State of as many different species of waterfowl as possible, 7 male and 13 female juvenile game farm redheads were released on the Upper Pool of the Montezuma Wildlife Refuge in 1952. Redheads had not been known to nest there previously.

Since the 1952 release, broods of redheads have been observed at Montezuma each Summer and, in 1955, five pairs of redheads produced at least four broods. While there is no definite evidence in the form of band observation, we like to believe that this stock resulted from the original 1952 release.

To counteract this bit of good news, no redheads have been observed remaining through the Summer on two other areas where releases were made in 1952.

These mysterious salmon

Experiments are in progress on the Pacific coast to support a theory that fish use the sun as a navigational aid in finding their way to their spawning grounds. It all started in an effort to clear up the mystery of how salmon find their way from hundreds of miles at sea to spawn in the same river where they were born.

In 1950 a scientist discovered that fish can smell differences between waters of different streams. It was found that salmon with plugged noses always got lost, unable to distinguish between stream waters flowing into the sea. Realizing the improbability of this being the whole answer to the mystery, tests were conducted with minnows, using an overhead light situated at an angle to simulate the sun. This disclosed some ability on the part of fish to recognize an artificial sun and to use a light source as a navigational aid. But, the sun's direction cannot be determined far below the surface of the ocean and it appears that more research is in order if the "homing behavior"of salmon is to be finally solved.

Insects greatest threat

Insects and disease destroy more timber in New York State and the Nation than fire according to State and Federal foresters. Modern fire fighting methods have pushed this one-time greatest menace into fifth place. Of the total timber loss of 15 billion board feet in the U.S. in 1952 from all causes, less than one billion was destroyed by fire. Insects though, killed five billion feet, weather about three and one-half billion feet, disease more than two billion and animals more than one billion board feet.

Marsh productivity

Records of fur catch from a recently impounded marsh area in Indiana emphasize the tremendous wildlife productivity of wetlands when properly managed. This 1,500-acre marsh called Willow Slough was first flooded in 1952. During the 1952 trapping season, 677 muskrats, 21 mink, 17 raccoons and three opossum were harvested. By 1954 the harvest increased to 1,984 muskrats, 15 mink, 39 raccoons, 12 beaver and 12 opossums. Over the four-year period the area produced muskrats averaging one-half pound heavier than those taken in adjacent areas of the state.

And the fur harvest is an extra dividend of Willow Slough's principal function as a waterfowl production area.

Kinne F. Williams

On June 18, the Conservation Department lost one of its outstanding members, with the death of Kinne F. Williams, since 1952 the Assistant Director of Lands and Forests.

Mr. Williams' service with the Conservation Department extended over nearly four decades, beginning in 1917, immediately after graduating from the New York State College of Forestry. He was first assigned to surveys of State land in the Adirondacks and later became Foreman of the State Tree Nursery at Lowville. In 1927 he was called to Albany to head the Bureau of Forest Fire Control, a position which he held until his appointment as Assistant Director. Under his leadership, forest fire control in New York became highly developed, particularly with respect to mechanization and radio communication and forest fires during this period were held to a minimum. As an expert in forest fire control, he was well-known throughout the northeastern region of the country.

During a part of 1944 he was Acting Director, and for this service above and beyond his normal responsibilities he was presented in 1946 with the Citizen's Award of Merit.

Mr. Williams' death occurring after a brief illness and an operation, was not only a severe loss to the Department, officially, but was felt acutely by his fellow workers, many of whom had been associated with him for more than a quarter century. Kinne's warm personality, goodfellowship and great sense of loyalty toward the men who worked for him, caused him to be held in the highest esteem and affection. His memory will remain as an inspiration to all those who worked at his side for so many years in the cause of forest conservation here in New York.

The Sassafras tree

When Summer heat gets you down, when you feel "dragged out" and have no more energy than a sleeping 'possum —what you need, my friend, is a sassafras tree!

At least, that's what people used to say years ago, when the oil from sassafras roots was considered the finest tonic in the world—one that would cure anything from stomach upsets and malaria, to acute Spring fever.

Believe it or not, the so-called "curative powers" of the sassafras actually had something to do with the settlement of America. The first Colonists learned about the tree from the Indians, who had been using the roots for generations to ward off evil spirits and disease.

It wasn't long before word reached people back in Europe about the tree that would cure everything. Even the physicians got all excited. So during the early 1600's, England instructed all explorers bound for the New World to keep an eye peeled for sassafras trees, and to bring back the roots by the shipload.

In 1603, the merchants of Bristol even formed their own company in order to cash in on the sassafras bonanza. By this time, the roots were commanding a big price in European markets, and the Bristol businessmen sent an expedition to the New World, for the sole purpose of getting sassafras. Their ship finally dropped anchor along the Connecticut shore of Long Island Sound, where they were loaded from one end to the other with nothing but sassafras roots!

(The sassafras tree, by the way, is still a common species in the Long Island region, on Staten Island and in the Lower Hudson Valley.)

Meanwhile, in the Jamestown colony in Virginia, Captain John Smith must have been busy collecting sassafras roots —when he wasn't making eyes at Priscilla Mullins. Sassafras was one of the first exports from the colony, we're told.

Later on, pioneer families found that the tree had other virtues, besides medicinal values. The timber was considered ideal for making fences—and because the wood has a fairly strong aroma, they began making bedsteads out of sassafras. Seems the odor was supposed to keep away the bedbugs!

Also, if you were making soap, you were supposed to stir the kettle with a sassafras stick, to get a high quality soap! (Mountain folks living in the mid-west still do this sometimes.)

Of course, until fairly recently—within the past few decades—sassafras tea was commonly used as a Spring tonic, along with the traditional sulphur and molasses. In the country, youngsters loved chewing on the leaves, too.

Today, oil of sassafras is used to some extent in the manufacture of soaps and perfumes, and to flavor root beer. Sometimes, the bad taste of an unsavory medicine is effectively disguised by adding sassafras oil.

The timber is still used for making fence posts, and because it's so durable it's also used in the manufacture of some small boats. Wherever the tree grows, song birds are likely to congregate. They love to eat the small blue fruit of the sassafras.

Incidentally, there's a legend to the effect that no two leaves on a sassafras tree are ever shaped alike, but this really isn't so. Most of the leaves have the characteristic mitten-shape, with what appears to be a thumb on one side—or sometimes, on both sides.

Although we no longer rely on the sassafras for a Spring tonic, keeping away bedbugs or stirring homemade soap, we do consider it one of our most interesting trees.—ROSEMARY CLARKE, *Radio Bureau, N.Y.S. Dept. Commerce*

Water

So, you think we had a rainy Spring. Well, perhaps we needed it. It has been brought to our attention that every cutting of alfalfa requires about 326,000 gallons of water per acre and that an acre of cotton needs 800,000 gallons to mature one annual crop.

On the industrial side, a large paper mill requires 50 million gallons of water per day. It takes 18 barrels of water to produce a barrel of oil, 25 gallons of water to produce a gallon of aviation gas, 250 tons of water to make a ton of steel, 42 gallons of water are needed to produce a pound of rubber, and 1,000 gallons of water are required to produce a pound of rayon. A person uses 1,300 gallons daily in the United States.

Fluke tagging program

The word "fluke" has several meanings. The arrow-shaped points of an anchor are called flukes. A sports event often has been won by a fluke, and a fluke, or Summer flounder, frequently has won a marine sport-fishing contest. It is the fluke as a fish that is of interest to the Conservation Department. These fish are flat in shape like the flukes of an anchor, and it is reasonable to assume that they were named for this resemblance.

The fluke is an important fish to the marine angler and commercial fishermen from the time they migrate into New York waters in the Spring until they depart in Autumn. They are generally, plentiful, game, and excellent on the table. They are available to many fishermen from boat and shore. Many are landed each year in Great South Bay, as well as from the outside ocean waters, and the angler can usually rely upon several large fish to bolster his catch. It is fortunate that these fish are numerous, and we want them to remain in good supply.

The best insurance against depletion of our flukes resource is to add whatever we can to our knowledge of its habits and fluctuations with the goal in view of applying the information toward proper utilization and management. One good method is to get the fishermen and the fluke working to obtain the answers. This calls for marking the fish with Peterson disc tags, releasing them, and for the fishermen to return the tags from marked fluke which they catch.

FLUKE FISHERMEN!

REWARD

For Return of Tags Placed on Fluke

The New York State Conservation Department is undertaking the tagging of Fluke to learn more about local and seasonal movements and fluctuations of this valuable resource.

To cooperate in this program, return tags from marked fish you catch to the Fish Research Unit, 65 W. Sunrise Highway, Freeport, for the Reward of $1.00.

$1.00 Reward

This Summer, to date, numbered tags have been pinned to 926 fluke. Each of these carries a reward of $1 when returned. Assuming the fluke do their part in carrying these tags on their various

wanderings, which past tagging studies assure us they will do, and the fishermen do their part in returning tags and details (including date of capture, method, locality and length of fish), we will obtain much useful information about this important marine resource.

Specific questions to be answered from such marking and release of fluke are: To what extent do fluke move within our bays during the Summer months; where do they migrate each Fall; how rapid is their growth; and what percentage are taken by the various fisheries. This research is part of a federal aid Dingell-Johnson project, which also includes studies of several other important inshore marine fish—JOHN C. POOLE, *Aquatic Biologist (Marine)*

A proud record

In June this year, Walt. Buckley, a waterfowl biologist for the Conservation Department, while checking duck brood production in Washington County, spotted a hen mallard with five young ones on a one- and a half-acre marsh near Greenwich. Now mallards are one of our most common nesting species of waterfowl in New York, so the find was not an unusual event. This mallard, though, has an aluminum leg band and when the records were checked, the lady turned out to have quite a history.

She started out life back in 1952 as a hatchling on one of the Department's game farms. On July 16, that year, when she was five weeks old she, and nine others of the same age, were released on this same small marsh—one of several small marshes in the area constructed by the Department under the P-R, Federal Aid Program. Even though these young-uns were "on their own" they did well that first year and at least half of them survived to join the Fall flight to southerly wintering grounds.

The following Spring (1953), the lady returned to the same little marsh, accompanied by a banded drake mallard of the same release group. On May 20 that year she was observed with a brood of 14 ducklings about two weeks old. Subsequent checks showed she succeeded in rearing 11 of her family to the flight stage.

Then in 1954 back she came again, this time with a new mate. Although she was not seen with a brood that season, the biologists think she did succeed in raising a family.

And in 1955—you guessed it—right back at the old stand and checked in on June 16 with a brood of seven about three weeks old.

All of which brings us around to the starting point—June 12, 1956—same place, same hen mallard, but another new brood of ducklings.

That hen mallard certainly has a record of which she can be proud. And so, when you think about it, has that one little wildlife marsh.

Fort Lee redoubt

Palisades Interstate Park Commission has recently acquired six acres of land on the west bank of the Hudson, completing the site for the restoration of the Fort Lee redoubt. There in November, 1776, General Washington watched the Flag being hauled down across the Hudson at Fort Washington as the Colonials surrendered to the British.

Restoration has been under consideration since early '52 but the Borough of Fort Lee (N. J.) fought a court order directing it to sell a 12-acre tract to the Sealantic Fund, Inc., a philanthropic fund established in 1938 by members of the Rockefeller family. The Borough finally settled, however, and the Fund bought the twelve acres, immediately deeding six acres to the Park Commission to round out the 25-acre restoration site atop the Palisades south of the George Washington Bridge.

Acquisition of title to the site, the Park Commission said, does not imply immediate work on the restoration project. That will depend on availability of funds. Plans call for duplication of the original gun batteries, magazines and related military structures and construction of a small museum. The historic area will be called the Fort Lee Section of the Palisades Interstate Park.—ROLAND B. MILLER

Cottontail stocking

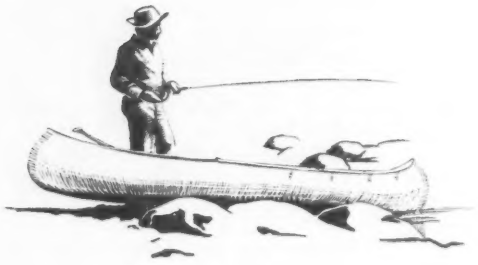
Evidence that stocking cottontails is a losing proposition continues to mount. Among the more recent studies to prove the point was one conducted during 1954 in Pennsylvania. In that year 898 rabbits were released in two counties open to public hunting. As of January, 1955, only 10 of these eartagged bunnies were reported taken by hunters. The take of marked rabbits represented only 1.11 per cent of the rabbits bagged in these counties.

The Brook

From the British Columbia Wildlife Review

"I come from haunts of coot and hern,
Alas, a fatal sally!
For through what heaps of junk I churn
As I go down the valley!
"By dirty dumps I hurry down
Where refuse lies in ridges
And folks bring garbage out from town
To heave it off the bridges.
"Mid wrecks of motor cars I flow
The bus, the truck, the flivver.
Oh, men may come and men may go,
But I go on forever!

"I slip, I slide, I gloom, I glance
O'er pipes and rods and wires;
I make the golden sunbeams dance
Among the worn-out tires.
"I chatter over pots and pans
In little sharps and trebles;
I bubble out among the cans
That quite conceal the pebbles.
"Til last polluted do I flow
To the polluted river;
Ah, saboteur! You come and go,
But I go on forever!"—TOM PEASE



Letters to The Editor

Posting and good manners

Dear Editor: Many comments and gripes appear in Letters to the Editor referring to posted lands. As a city resident not having missed a deer hunting season in twenty years, I am strongly in favor of posting property. Some of my reasons follow:

1. I have never been refused permission to hunt by a farmer, having requested that permission on many occasions. 2. With the high-powered rifle so commonly used it is very important (for safety sake) that each hunter have some idea as to the location of other hunters.

After a hunter chooses a location to hunt, it is advisable for him to join a club to his liking in that vicinity. Or stop at some farm house and make reservations for his hunting conveniences.

Posted land means systematized hunting. Posters always impress me as being meant for poachers, trespassers, or wandering hunters. The farmer does not fence in deer when he posts his land. The deer can run where they please, but the farmer is entitled to know who is on his land and should get at least a friendly thanks for allowing you to hunt.

Martin J. O'Connor, Franklin Square

• *As you suggest, the farmer and the city-dweller have equal rights in determining who shall be their guests.—Editor*

Property rights

Dear Editor: I favor posting of private woodlands for many reasons. For one reason many people are careless about their smoking and throw matches or cigarettes or cigars or even empty their smoking pipes without thinking of what would happen when a forest fire would start.

For this reason I don't want them on my property; I feel this way—if they are so careless with their smoking let them buy their own woodland and burn their own woods up, not mine.

Many hunters and fishermen don't own or pay land and school taxes for these woodlands that they hunt and fish on and they just don't care what damage is done to someone else's property.

I think if they paid a big price for private woodlands and always paid their land and school taxes they too would post their private woodlands. I feel posting my private woodlands after paying a big price for it, is the same as buying a house and putting a lock on the door of my own house.

I think the only people who are against posting private property are those who never owned any of their own and never paid any land or school taxes to hold such private woodlands.

Many hunters also throw rubbish onto other people's property and try to make a dump out of it.

Anthony Petrofsky, Merrill

• *We can appreciate your point of view. But we know, too, that it is the few who litter, are careless and who have no regard for personal or property rights of others who give the majority that do care a bad reputation.—Editor*

Brush for bunnies

Dear Sirs: I am a boy of 15 years of age. I do a lot of hunting. Since hunting season is closed, a few of my friends and I have been building brush piles, for the rabbits. There are a few hills that just have grass on them. If we could plant these hillsides with natural rabbit food, like clover and other plants, pine seedlings would prevent erosion. There would be plenty of rabbits. The farmer who owns the land has agreed to our plan. The reason I write this letter is to obtain these seeds, and information about them, from you. I enjoy reading your magazine, THE CONSERVATIONIST.

Richard Price, Albany

• *You are on the right track with the rabbits* and *the landowner to assure yourself a place to hunt and something to hunt for in the years ahead. We are glad to send along information on planting stock.—Editor*

Mail damage

Gentlemen: I presume you go to appreciable expense to put beautiful colored plates on the front and back covers. At any rate this is one of the fine features of the magazine. How about mailing THE CONSERVATIONIST in mailing envelopes and protecting these nice covers? If the weather is wet the day THE CONSERVATIONIST comes to the house, the magazine is wet. In the case of change of address, the magazine covers are mutilated with pencil, pen, and postage due stamps. If you can't use mailing envelopes, let's have the fine plates moved from the cover to the inside.

Peter H. Castine, Garden City

• *We know this is a problem. An even greater problem is the expense of mailing in envelopes.—Editor*

Sidearms to Canada

Dear Sir: Through reading your replies to different subscribers in recent issues of THE CONSERVATIONIST I was wondering if you could possibly set me straight on this question:

With reference to taking firearms into the Province of Canada, I have a 22 revolver which I would like to take on several camping and fishing trips this season for target practice. The pistol is legally registered and permit issued for New York State. I was wondering if Ontario, Canada honored this permit.

J. William Parsons, Palmyra

• *Customs regulations in effect along the Canadian border permit individuals entering the provinces to hunt legal game to take in rifles and/or shotguns provided they register make, caliber and serial number at the customs office upon entry. We do not think, however, that such authorization extends to revolvers or similar sidearms. To make sure though, we suggest, in the case of Ontario, that you write to the Department of Travel and Publicity, Parliament Building, Ontario.—Editor*

Zone line

Dear Sir: I am sure that I am among many who were greatly interested in the article by Dr. E. L. Cheatum on "Zone Lines," appearing in the recent Feb.-March issue of THE CONSERVATIONIST. I am one who lives astraddle the present much-disputed line. Also, because I wrote the Department in November, 1953, stating early local opposition. I speak mainly of the area west of Utica and Rome, and north from Central Square (route 11) to Lake Ontario.

In almost every instance of contact with hunters and landowners alike I have found dissatisfaction, having talked with more than a hundred local people, and even with an occasional tourist along route 49.

The main opposition usually was, and still is, that the road, or practically any road used as a boundary, is too easily abused. Honest hunters found that this was apparently readily done, and that when the south side was opened later the area between route 49 and the Barge Canal had been pretty well "hunted out" already—this strip being a rather narrow one for many miles. In some cases done apparently by wilful trespassers, and in others by hunters who had lost direction, crossing back over the road to the south, thinking that they were actually going north and had crossed another road instead, as route 69 to the north. In the case of "wilful violators" they probably found it not at all hard to watch a covey of partridges or an inviting buck cross over the narrow highway and soon go after them at a convenient chance, with little interference.

Franklin J. Passer, Rome

• *Uniform, north-south, opening dates this year for small game seasons and, accordingly, elimination of the zone line for such game will, we believe, go a long way toward solving this problem.—Editor*

Color prints

Gentlemen: Do you have any color plates of fresh water fish like those of Sunfish August-September, 1954 issue of THE CONSERVATIONIST to which I subscribe. If so could I get a copy at cost or free? I am especially interested in bass, and other fresh water fish of this area. Thank you.

E. Hauschild, Port Crane

• *Although reprints of color work that has appeared in* THE CONSERVATIONIST *are not available, we do have a number of back issues of the magazine available. A listing of these may be secured upon request to this office.—Editor*

Seabee lean-to

Gentlemen: Could you tell us where we can get specifications for building Seabee Operation Lean-to illustrated in the April-May issue of THE CONSERVATIONIST.

Mrs. Alfred Henderson, Poughkeepsie

• *A comparable structure, the Adirondack lean-to, was featured in an earlier issue of* THE CONSERVATIONIST. *Reprints of the construction plan are available. We are sending a copy along to you.—Editor*

Strange sign

Dear Sir: Under date of Jan. 6, 1954 you replied to my inquiry about a strange sign at the junction of the trails near the Four Corners lean-to south of Marcy. About the only person who was sure he had seen the sign was Ranger Chet Rafferty.

We did not pass that way again until the morning of last July 4th, when we made sure to get the enclosed picture. It describes the sign very well except the back which is the round side of the split log with most of the bark still on. The arrows point to the Blue trail to Elk Lake and the east. In the picture you can see that it is on the same tree as the CD trail sign.

All this time I have been trying to find out anything about the sign without success. In the book "Up Old Forge Way" which I read about a year ago it states that the ski instructor at Old Forge, at the close of the Winter sports season, betakes himself to a lean-to near Marcy and camps out for some time. As near as I can recall he was a Norwegian by the name of Bollis or something like that. Anyway I wrote him a description of the sign and everything and asked if he knew anything about it. The letter was addressed to Old Forge and altho it had my return address it did not come back nor did I hear anything from it. The reason I thought he might know about it is that most all men from that part of Europe are woodcarvers and the sign must have been made by a good carver who had plenty of time for the work.

Another slant is that an acquaintance here in Geneva spent some years in the west and is a member of the Colorado Mountain Club. He says that he will send the picture to the secretary who can find out if there ever was such a sign in the Tetons or anywhere out there. He also says the word Teton is Spanish and means a woman's breast. It occurred to me that the sign points toward Elk Lake from which side of Nipple Top Mt. the resemblance is most evident. Also it seems as though I have read about an ice cave near this trail where ice is found at all seasons of the year.

Jess Dildine, Geneva

• *Still another possibility is that someone is pulling your leg—or ours.—Editor*

Soil analysis

Dear Editor: I have recently purchased a home in Queens, New York City. There is absolutely no topsoil in the back part of the property, which, however is well graded. I want to make a scientific evaluation of the subsoil and add whatever material is needed to it before I add the overlay of topsoil. Can you suggest how to get an expert opinion on this subsoil?

In addition I would appreciate any references you can give me to literature on lawn preparation and culture of fruit trees of a dwarf variety.

Benjamin C. Rosenthal, M.D., Brooklyn

• *County Farm Bureau Agents will make a soil test for you or analyze submitted sample borings. I don't seem to find any listed for Queens, so you may have to contact one of the following: In Westchester Co., W. S. Androsko, P. O. Bldg., White Plains; in Rockland Co., W. J. Clark, Knapp Bldg., New City; in Nassau, H. H. Campbell, Old Court House Annex, Mineola.*

For lawn preparation we refer you to "Back of the Book" of the June-July issue of THE CONSERVATIONIST—*see item pg. 36, "How Does Your Grass Grow," and reference to booklet published by the N. Y. S. Dept., Public Works.*—EDITOR

Deer suggestions

Dear Editor: Your article "The LaDolce Case" in the February-March, '56 issue brings to mind a question which has plagued me. Why doesn't New York State adopt a law similar to Maine's which requires a person convicted of poaching a deer to spend 1 year in jail? LaDolce would have been less apt to take the rap for his pals if he faced 5 years in the clink. Such a law would reduce poaching by half in my estimation.

Then we come to our very informed hunter Henry Bradley of Kings Ferry. He dislikes the thought of shooting does. I believe Mr. Bradley should be taken on a tour of our forest when the conditions are right and allowed to see for himself the Winter-killed deer. I remember about 10 years ago when I took a Spring hike in my favorite hunting grounds and counted 36 dead deer on about one acre of ground. Maybe such a sight would drive home the facts of life to our well-meaning but poorly informed citizen—newspaper editorials, articles by deer management experts in sporting magazines and all efforts in that direction seem to have failed.

Before I close I would like to cast my vote for a doe season and permits to hunt issued on a county basis with residents getting preference to say 70% of the licenses issued. There are a great many areas around here posted but if you are a resident you'll get permission to hunt. But pull up in a car bearing a "big city" plate and its likely you'll get a curt "no" for your trouble. More and more territory every year is falling into this category and a wide open doe season isn't helping the city hunter any.

Keep trying to please everyone—if it is possible.

H. Wayne Davis, Salamanca

• *We keep trying.—Editor*

To stock or not to stock

Dear Sir: I think it is worth suggesting that a copy of the letter to the Editor from George A. Reed, Ontario County Federation titled, "To Stock or Not to Stock," June-July, 1956 issue, page 42. be sent to the Secretary of all other federations. Those men from Ontario County did a wonderful thing to make that resolution and adopt it. The resolution and the information expressed in it should get more publicity. Too many are prone to ignore or lambaste research information and substitute ideas which have no scientific basis.

Ralph Work, Gloversville

• *We hope all federation secretaries are subscribers.—Editor*

Iron furnace

Dear Sir: I have been wondering for the last long while about a cellar in the middle of the forest in southern Essex County.

It is located on the branch of the trails leading to Pharoah Mountain. The other trail leads off to Pharoah Lake, Grizzle Ocean, and Putnam Pond. The cellar is about six or eight feet deep and has several large trees growing out of it. It is an "L" shape. It measures about 20′ along each of the outside walls. It is built with typical Adirondack stone, large stones and fairly round. Was this a guide cabin or what?

Another thing I am curious about is a large tall structure on the road leading to the old Tahawas Club. It is built up with stone. It looks like a support for a bridge. I only saw it twice and can't describe it accurately. I remember a large half circle opening on the bottom of the side facing the road. Was this part of the lead mine at Tahawas P. O.?

Kiake Fay, Silver Spring, Md.

• *The structure at Tahawus is an old iron furnace which has been there "lo, these many years." I believe it goes back to the original mining of iron ore there and it is my understanding the iron was smelted (if that is the correct word) from the ore in it.*

I know nothing about the old foundation in the Pharoah Section but presume it is the cellar bottom of an old farm house. They used to farm away in at Crane Pond. Maybe Bill Petty's ranger for that section, would have some dope on it if you want to refer it to him.—Wm. Mulholland, Supt., Bur. Camps & Trails

Girls' conservation camp

Dear Sirs: I would like to know why they don't have a conservation camp for girls like they have for boys. I have two girls that I know would be interested in one. The more wild the forest the better they like it. So I figure a camp such as that would be just the thing. There are very few things girls can't do that boys do, and I don't think there is anything more interesting than wild flowers, trees and animals to have for a hobby and to learn more about.

Mrs. Arthur Anderson, Troy

• *We hope that day will come.—Editor*

Albino mallard

This Albino is a conspicuous member of a flock of domestic mallards at Hampton Bays, Long Island. David Van Scoy, who took this picture says this white mallard is two years old.

Porcupine quills

Dear Sir: While hunting for ruffed grouse last Fall, one of our bird dogs named Gunner caught the scent of a dead porcupine. Spotting the carcass, he plunged on it, not knowing the danger of the porcupine's quills. Jim Brooks, the owner of Gunner, tried to stop him, but he was too late. Gunner picked up the porcupine and gave it a good shaking. He had about two hundred quills pinned onto him.

These quills are very painful and could eventually cause death if they were not removed. Jim felt like putting Gunner out of his misery.

We went back to the car and drove fifteen miles to the nearest veterinarian, where Gunner was cared for and eventually recovered.

The story I just told can happen to any dog. We didn't have time to find the cause of the porcupine's death.

As you know, the New York State porcupine is not protected by law. But there is always the guy who has to kill, and worst of all, leave the porcupine on the ground.

I would like to leave this message with all hunters. If you happen to come across a dead porcupine, it would only take a minute to place it in a tree where dogs cannot reach it.

John Calleri, Rochester

• *Good point.—Editor*

Ticks and chiggers

Dear Editor: In the December-January, 1955-56 issue of THE CONSERVATIONIST, a Donald W. Palmer of Drapell, N. J. requested information in reference to the jigger (or chigger) and the tick.

This writer would like to offer some practical suggestions on the prevention and treatment of bites caused by these insects, if he may. The writer draws on some years' experience in the military service, both in the states and overseas, as well as a constant camper in our State parks.

It has been my experience that the best prevention (aside from avoiding the areas where the insects live) is to apply finely powdered sulfur over the skin and into the underclothing and socks, to use G.I. insecticide powder or kerosene. Coconut oil is also very effective and has an advantage over kerosene in that it has no noticeable odor.

Ticks can usually be removed by applying a drop of iodine or covering them with a good coating of sputum. To prevent infection any germicide or disinfectant such as proflorine, zephrin, or iodine will serve the purpose.

Jiggers or chiggers are best removed with a sterile needle or knife point, then painting the area with iodine and covering with a protective dressing. If there is a great deal of pain as a result of the irritation caused by the insect bite, the author has found that a compress made by soaking in aromatic spirits of ammonia and applied to the area will alleviate the pain.

As a final treatment a good alcohol rub or a plain bath with soap will usually help.

Leonard Shields, Brooklyn

• *We hope to have an article on these unwelcome citizens in an early issue.—Editor*

Colvin and others

Dear Sir: I note in a recent issue of THE CONSERVATIONIST, (p. 43), reference to a series of articles on Verplanck Colvin.

I should be interested to know if and where these were published. They would be useful in my own (amateur) historical researches.

In fact, I have often wondered if Colvin left any notes and papers other than his printed reports—and if so, where they are. They might contain useful material.

My special interest is the Indian Lake region.

Warder H. Cadbury, Cambridge, Mass.

• *Our article on Verplanck Colvin appeared in* THE CONSERVATIONIST *for February-March 1954.*

This Department is fortunate in having many of Colvin's papers, field notes and reports. References to him can also be found in volumes in the State Library.

An article on Indian Lake appeared in THE CONSERVATIONIST, *and a reprint of this is enclosed.*

For further reference try the libraries for Donaldson's two volumes on the History of the Adirondacks; Harold K. Hochschild's "Township 34," a privately printed volume of tremendous size. There's also a book by White on the Adirondacks.—R. B. M.

Woodpeckers vs. civilization

Gentlemen: I just finished reading your article "Woodpeckers vs. Scientists." I cannot help but feel sorry for the woodpecker, as he was first on the scene and the power companies came later. This feeling increased as I came across this newspaper article which I am sending to you in the hope it will be of some interest:

"Peck of Trouble for Woodpeckers"

"Some woodpeckers are going to have sore beaks.

"In Michigan, a utility company is setting out fiber glass poles instead of the wooden ones which woodpeckers 'just eat up.'

"Woodpeckers are death on wood poles. They can cut one meant to last 30 years down to a four-year life span.

"More of a problem around here are squirrels and fish hawks (ospreys). Squirrels are fascinated by anything shiny. They run up the poles and chew away at the insulators and short-circuit the lines. They die in the process, but don't feel too sorry for them. In one six-month period they caused 223 service interruptions in the Long Island Lighting Company territory, cutting out the power for 8,694 electricity customers.

"In the same period birds caused 31 service interruptions. Fish hawks love to build nests atop utility poles at the crossbars, especially at the eastern end of the Island. Utility men sometimes have found it easier to cooperate with the birds than to contest them. They build platforms atop the poles especially for the hawks to use.

"This fiber glass pole project may have repercussions in the bird and animal worlds around here, sure enough! Besides being hard to bite, they'll be hard for squirrels to climb."

I do hope that some measure is taken to protect the bird, as it would be a pity if this part of our wildlife were destined for extinction just because our present civilization does not have a ready place for it. As you can see from the newspaper article, this bird is not the only animal which is "inconvenient" to our modern mode of life. If every animal would be marked for control and preventive methods which is inconvenient to modern way of life, there would be hardly any wildlife left in the U.S.A.

Fred J. Heilbronner, Elmhurst, L. I.

• *We do not believe the woodpeckers have anything to fear. In New York they are protected by law and I think most people in the field would respect them even if they were not.—Editor*

And again

Dear Sir: I read with great interest the article about the Pileated Woodpecker in your February-March issue. It might interest you to learn that I have had one of these birds—they never came in pairs—as a regular, though infrequent, visitor right in my backyard for the past 2 years or so, but only during the Winter months; i.e., from October to about April. I saw him only a few days ago pecking merrily away for 10 or 15 minutes on a smallish oak tree which I know is infested with carpenter ants.

Last Fall—either late October or November—I saw this bird feeding on the red berries of one of my dogwood trees about 4 feet away from the house, to which he came back day after day until the last berry was gone. I had not seen him all Winter until last week, and although I have a woodpecker feeding station (suet) to which all varieties of woodpeckers flock (from the little downy to the larger varieties) I have never seen this bird feed there. However, I have never seen any of them—neither small nor this giant one—peck away at the light poles which run along the highway.

Mrs. Michael Zink, Greenwood Lake

• *Guess he liked the dogwood berries and carpenter ants better.—Editor*

The end

Editor: Last Fall having spent ourselves on a full day's still hunting and while resting thoughtfully against the butt of a couple of scrub pines, a pileated woodpecker lit into the top of a tree just across the road from us. My partner wanted to take a shot at it. I said don't, protected bird, not too recently threatened with extinction, etc. Partner listened reasonably. We continued resting. Like a flash a pigeon hawk cut into the picture, took after Mr. Woodpecker, chased him all over this little acre and killed him deader than a smelt right in front of our eyes.

Charles Major, Chestertown

Never too young

Gentlemen: Have just purchased a 122-acre farm and would like to set out trees. Can you kindly send me information on this matter. I was given to understand the State has a conservation project.

J. Rennison Love, Ft. Plain

P.S. I am 12 years old and need help.

• *Assuming from your address that your farm is located in Montgomery County, just about the best information we can send you is the address of our District Forester for that county and suggest you contact him for "on the ground" advice. The State is divided into 15 forest districts for just such purposes and so that the foresters in each one can give better forestry service to landowners like yourself. Montgomery County is in Forest District Number 8 and the address of the District Forester is 270 Main St., Herkimer.*

We are enclosing a copy of Forestry Bulletin Number 2 which will give you a good general idea of forest planting in New York and how to go about it. We are also slipping in a leaflet which describes the Forest Practice Act and which the District Forester will be glad to further explain if you are interested. Perhaps this is the "conservation project" you have in mind.

Wish more people, young and old, would seek guidance before starting conservation projects.—Editor

Problem at Tilly Foster

Gentlemen: My husband, who receives his copy at the office so he can get to read it undisturbed, and I have a hard and fast rule about keeping our CONSERVATIONISTS intact.

This has been a herculean task since our three boys always find something in the current issue that they would like to clip and use in a school or Scout project.

And when I saw the article, "Conservation—For the Birds" I had an irresistible impulse to remove that double spread color plate and mount it for use in our Cub Scout Den.

Therefore I am hoping that you have available reprints of this page. Mother would be able to look her boys straight in the eyes again, father would be blissfully unaware that mother had ever considered obeying such an impulse, those Cub Scouts would be kept busy for weeks, and those wonderful, wonderful, CONSERVATIONISTS would lie undisturbed on the shelf in all their pristine beauty.

Frances Boas, Tilly Foster

• *While we cannot furnish separate prints of color work in* THE CONSERVATIONIST, *we can and do sell separate copies of the magazine at 50 cents each.—Editor*

Irondequoit shelldrakes

Dear Editor: If Harry C. Burns of Duxbury, Mass. wants to have the best shelldrake shooting of his entire life send him up here to Irondequoit Bay, near Rochester, N. Y. If it doesn't freeze too fast, our flight is good for a month and any moderate nasty day will bring them off of Lake Ontario and into the Bay. On a real nasty day he won't believe it. He won't need shelldrake decoys. They come in best to mixed flocks of divers and puddlers.

Most duck hunters here pass up shelldrakes since they have been included in the daily bag limit of four or else shoot them and don't pick them up.

Earl G. Roach, Rochester

• *It was the hope of curtailing this latter practice that prompted the Fish and Wildlife Service to include this species in the daily bag limit.*—EDITOR

Great horned owl

Dear Editor: Returning from an unsuccessful morning of trout fishing (Cross River Reservoir, Westchester County) earlier this Spring, my good friend Rene Roemig and myself were passsing through a grove of pines when we flushed a brownish colored bird, with quite a large wingspan, from a not too distant maple, where it had evidently been roosting. It flew to a small clump of saplings bordering the shoreline, where it settled itself. We approached quietly with the intention of identifying it and perhaps taking a picture or two. Imagine our surprise when the bird in question turned out to be a large owl which then flew to the lake shore and allowed us to within ten feet of it where it sat blinking at us as we took pictures. It became rather perturbed, however, when we closed the distance for some closeups. Its displeasure was quite evident from the way it hissed, flared its wings and clacked its beak. It stood the clicking of the shutters for as long as it could and then flew away.

We checked various bird books and are of the not too firm opinion that the owl we saw was a short-eared owl. Therefore, your expert identification and any comments on your part would be greatly appreciated.

Joseph Kenny, Bronx

• *The owl you found was a young horned owl, undoubtedly hatched in late February or March of this year. The markings, as indicated in your photographs, are typical, and there is no doubt as to the identity.—Editor*

Home problems

Gentlemen: Congratultaions on your magazine. I never fail to find it interesting.

We have two home problems on which I hope you can give us help.

1. A machine for grinding up leaves. We have mostly oak trees and the leaves are slow to decay. We cannot leave them as they fall because they smother small plants and vines, and are a fire hazard in a dry spell. But they would make excellent mulch for our shrubs (rhododendrons, mountain laurel, azalea, etc.) if we could only grind up the leaves and thus hasten decay.

2. We are overrun with chipmunks—holes everywhere and rock walls undermined. What can we do?

Mrs. Robert Lightburn, Butler, N. J.

• *Not knowing the magnitude of your leaf disposal problem makes it rather difficult to categorically answer your question.*

Of course composting is usually the most satisfactory method if the volume is within reason. You can obtain information on how to do this from your local County Agricultural Agent.

Should your problem loom larger than this, then on that premise a rotary mower with a leaf mulching attachment might work. However if your property falls in the estate class and a thorough job is desired you may wish to consider the purchase of a portable "hog" (a macerating machine) or a brush grinder. These can be purchased at a cost of $1,500-$3,000, and will do the job but at a price. One of the several manufacturers of such equipment is Mitts & Merrill, Inc. of Saginaw, Michigan.

Chipmunks can be taken in ordinary snap mousetraps baited with peanut butter. However, these little rodents seldom do any great damage and their lightning-fast scamperings are fun to watch.—Editor

Feel hungry?

Dear Sir: Last Summer our family was fortunate enough to spend two weeks at Cranberry Lake in the Adirondacks. While we were there we went on an overnight trip to an island. During the night a raccoon ate some of our food. Also during the time we stayed at our campsite a raccoon during the night would tip over our garbage pail and eat some. My question is do they or don't they wash all their food.

Bill Tower, Syracuse

• *You will note from the tear sheet sent you of Clayt Seagear's article on* Mr. Monkey Mitts *that appeared in* THE CONSERVATIONIST *for February-March, 1951, that the cleanliness badge tied to the 'coon is somewhat unwarranted. According to Seagears, food must tickle the 'coon's palms as well as his palate. Perception seems to be through his hands, not his eyes or his nose. The 'coon "washes" his food whenever possible not to cleanse it or make it more palatable but merely because it feels better in the water.—R. B. M.*

Wild pets

Dear Editor: Would you please inform me if there is any ordinance or law applicable to any part of New York State which states: That a person may not own or harbor a raccoon.

If I were to purchase one from a mail order house such as Spiegel, Chicago, Illinois, could any Game Warden remove it from my home or property? Does the same ruling apply if I were to find an abandoned nest and reared the small ones as pets?

Mrs. Elaine Brimacombe, Bronx

• *The Conservation Law in this State does prohibit the possession of any protected species of wildlife unless such bird or animal is secured from a legal source and further provided that the possessor shall secure from the Department, a permit to keep such bird or animal. Possession permits for protected species legally acquired may be secured upon application to the Department's Bureau of Game and are issued for a fee of $1.00 per year.—Editor*

Sawfly

Editor: I have some spruce trees and every year, about June, a little, small green worm appears—about ¾ of an inch long and round which eats the foliage. I would like to know what I can spray these trees with to kill these worms. I think these are called spruce worms but I'm not sure.

R. S. Barden, Antwerp

• *Contacted Ray S. Barden of Antwerp as requested in your letter to District Forester F. E. Jadwin. After talking to Mr. Barden and from his description of the insect in question, there is no doubt that it is the European spruce sawfly. Advised that he spray with 12 per cent DDT as prescribed by Roland B. Miller (in his letter to Mr. Barden) as soon as larva appear.—Clifford Hebdon, Forest Pest Control Foreman*

Another old Ford

Dear Sir: I have been following with great interest the article "Adirondack Hotels," especially the Wells House at Pottersville, N. Y. I don't intend to get into any debate with Mr. Hadley of Westport or Mr. Mosher of Albany or with you Sir. I may be of some help in solving the vintage of the Ford car in the picture.

In 1914 my father, my cousin and I went to Montreal, Canada, in the Model T Ford which picture I am enclosing. We stayed over night at the Wells House before leaving for Montreal the next morning. I remember it very well as I was 14 years of age at the time. If I remember correctly the bar was on the first floor, and over the bar was mounted northern pike, deer, etc.

When I saw the picture in the Dec.-Jan. issue I thought sure the man standing beside the Ford was my father, because I believe there were pictures taken the morning we left Pottersville. Of course I guess I am wrong as my father's Ford had a brass radiator.

Adrian P. Coty, Pittsfield, Mass.

• *We will rest the "old Ford" case right here. We have visions of thousands of family albums filled with pictures of early models of Ford cars, all of which toured the Adirondacks.—Editor*

High living for chickadees

Dear Sir: The CONSERVATIONIST is doing a real service to the nature-minded by spreads like New York State "Warblers" and "Snakes." Narrowing the field like that helps the busy teacher do a better job. Thanks.

While cleaning smelt this Winter it occurred to me that since chickadees eat so many insect eggs maybe they'd like roe. Carefully saved half a teacupful. They didn't care for it while it was soft, as it stuck to their feet, but as soon as it froze they went for it in a big way and so did the nuthatches.

Though I've never heard of anyone else using roe for the purpose it seems like a more natural food, when available, than the doughnut so often offered.

Mrs. G. Henry Howard, Westport

Bird banding

Dear Sir: We have been feeding the birds this Winter and have enjoyed it greatly. We have had lots of evening grosbeaks and bluejays. This morning we have had grosbeaks, bluejays, tree sparrows, song sparrows, fox sparrows, cowbirds and slate colored juncos, and of course the English sparrow and starlings. We noticed on one junco's right leg a silver colored leg band. We were interested to know if this was some work of yours.

Donald Myers, Cobleskill

• *The band which you observed on the junco is none of our work. The Department does do some banding of migratory waterfowl and woodcock, but we don't do any of such work on song birds. We must admit, however, that some of our personnel do band birds on their own time. For further information on bird banding—which can be done only with license issued by The Federal government—write the Fish and Wildlife Service, Washington D. C.—Editor*

Bullhead note

Dear Editor: Maybe you or one of your staff could explain this for me. On the second day of duck season I ventured over to Canadice Lake (also took along my casting rod and night crawlers). Didn't get any ducks, but pulled in about 20 nice bullheads, all about ten inches long and all had spawn in them. Is this unusual for bullheads at that time of the year? Incidentally, the lake was very, very low at that time.

Don Fraretti, Livonia

• *Not unusual; any early spawner such as the bullhead is likely to have pretty well developed eggs by late Fall.—Editor*

Death of deer

Dear Editor: Recently two deer, attempting to cross the high level bridge that spans Cattaraugus Creek between Erie and Cattaraugus counties on Route 219, became confused on account of workmen and traffic, leaped the railing and plunged 186 feet to their death in the Creek bed.

Charles H. Ploger, West Valley

Two trees, a big buck and a broken neck tell the story. The deer had been dead several days when found by George Follett on his farm near Oswego.

Trout food

Dear Editor: I have a small pond in which I stocked last year about 100 rainbow trout 5 to 7 inches long. Since there is not enough feed in the pond I want to supplement it artificially, and would welcome any advice you could give me as to a convenient type of food.

I noted with interest the mention of "food pellets" prepared by G.L.F. in April-May CONSERVATIONIST of 1954 ("Food for Trout," page 36). Could you tell me if this product would be suitable, and where I could obtain it?

M. A. Chapman, Schenectady

• *The pellets you mention are good food but rather expensive compared to use of bread, ground meat or other scraps which can be used to supplement whatever food there is in the pond. Don't supplement too much, however; your pond might become polluted.*

Your local G. L. F. should have these pellets, or could get them for you.—Editor

Bird houses

Dear Editor: A word about bird houses. I think lots of people have very good intentions when they make the houses and put them up. But why! oh why, do they let these houses be taken over by European sparrows and starlings. It is OK to give free homes to our native species, but I think if people don't care enough about the houses to watch to see that they aren't taken over by these interlopers, they shouldn't put them up.

This year I had bluebirds and a small colony of tree swallows. I had robins, cedar waxwings, and chipping sparrows all nesting in the same pear tree. Is that a record?

Elaine A. Combs, West Pawlet, Vermont

• *If not a record, very congenial.—Editor*

Bear trap

Gentlemen: I have for proof a picture of a bear trap 43½" over all, 16" spread at the jaws. This trap apparently tops for size the one shown in the December issue of THE CONSERVATIONIST.

This trap was found chained to an old rotten log in the woods near my camp in the Town of Lyonsdale, Lewis County, about eight miles east of Port Leyden. No doubt the trap had been lying in the woods for over forty years as we have hunted this territory since 1912. It was undoubtedly hand made and is of very heavy construction. When found it was partly buried in woods dirt. I have the trap at my camp at present.

J. M. Doster, Syracuse

Playing with fire

Dear Sir: Topic: Unusual deer; Place: Farm of Mr. & Mrs. Carl Wallaber, Buck Hill, Oneida Co.

Story: This 4 point buck, when in the velvet, came out of the woods to the farm fields to eat—and finally came up to the apple orchard behind the house and started to play with the cow dog.

Each time Mr. or Mrs. Wallaber saw the deer they would go out to him, and finally the deer started eating out of their hands. The deer came up to the cow barn and would go in to get food; he would eat any vegetables given him.

This deer wasn't afraid of strangers . . .

Protector Charles G. King, Booneville

• *We hope that Mr. and Mrs. Wallaber realize they're playing with fire. A cute and docile buck during the Summer may become a dangerous animal when the rutting season comes along in the Fall. And that's not mere speculation; we have plenty of records to prove it.—Editor.*

Alex Sweetman, Greentown, L. I., makes these

Sick maple

Dear Sir: I have a large maple tree that provides us with the shade we need throughout the hot Summer days. Last year part of it turned and the leaves fell off long before the rest of the tree. This year that part never came back and some branches are bare. We would like to save this tree and any information you can send me will be appreciated.

Mrs. Anna Palladino, Chatham Center

• *Rather than just guess as I would have to without examining your tree for the cause of the damage, I'm asking Mr. William E. Smith of this Bureau to call on you and to inspect the tree. He will be able to recommend corrective measures to you following his inspection.—C. J. Yops, Supt., Forest Pest Control*

Shotguns vs. rifles

Gentlemen: I am a licensed non-resident hunter living in New Jersey but near the New York State line. I hunt all the southern counties near home but make an annual trip for a week to Angelica for deer hunting. To me the terrain in Alleghany and Cattaraugus counties seem the same as Orange County and certainly less populated yet I can't find the reason for the use of shotgun compared to rifle in Orange County. The rifle being more accurate is no more dangerous and is definitely a cleaner killer. The man with a rifle target sights his gun and aims it the same. The man with a shotgun unconsciously swings and bird-shoots at deer spreading five shots all over the countryside. Please explain the reason.

Russell E. Thomas, Fairview, N.J.

• *A limited section along the New York-Pennsylvania line is probably hilly enough for the safe use of rifles. However, the majority of the western Southern Tier counties, and most of western New York, has a flatter terrain along with high human populations that would not be conducive to the use of rifles. Also, hunter concentrations in Allegany and Cattaraugus counties are nearly twice as high as in Orange County. The majority of landowners and sportsmen in these areas seem to prefer the restriction to shotguns.—R. E. Hyde, District Game Manager*

Russian rifle

Dear Sir: Can a Russian Model 762MM rifle be used in the State of New York for big game?

Maryland Williams, Brooklyn

• *If your gun conforms to the regulations listed generally on page 6 of the Hunting Guide we're sending you, it may be used.*

Briefly, it's illegal to possess afield an automatic firearm (one which continues to fire as long as trigger is held back) or an autoloading firearm with a capacity of more than a total of six shells. (An autoloader is a self-loading gun which requires that the trigger be pulled for each shot fired.) And, of course, you couldn't use, during the big game season, a rifle in any county where hunting of big game is confined to bow and arrow or shotgun.—R. B. M.

The Clark trap

Gentlemen: In answer to letter in your October-November issue with reference to Bear Trap.

Enclosed is a picture of a bear trap forty-four inches long, jaw stand about seven and one-half inches high giving a spread of about sixteen inches, diameter of pan is six inches, is hand forged, owned by T. C. Clark of Crown Point, New York. No date on the trap but it carries punched initials of the maker, a relative of Mr. Clark.

Keeps up you will find all the bear traps left in New York State at this late date.

F. B. Warner, Port Henry

Off and running

Dear Sir: I enjoy your magazine second only to "Western Horseman." (I'm a horse fan.)

I especially enjoy your "Letters to the Editor." I enjoy this just as much as the rest of your wonderful magazine. THE CONSERVATIONIST is delivered to my home in Highmount, but during the Winter I live in New York City so I get two or three magazines at once. I like to read them this way because of the answers in the next issue of the "Letters" in the first issue.

All I can say is, keep up the good work.

Liz Trauring, Highmount

• *Thank you. It's good to know that we're placing in the money.—Editor*

Biological survey reports

Dear Sir: I should like to know if the book "Biological Survey of the Oswego River System 1927"—Supplement to the Annual Report, is available at the present time. If so, where can it be obtained and what is the cost?

Mrs. Grace Lawless, Librarian
Vernon, Verona, Sherrill Central School, Verona

• *We still have a copy available of the Oswego biological survey. It sells for $2.60. Address, Division of Conservation Education, State Conservation Department, Albany enclosing check or money order, favor of the N. Y. S. Conservation Department and it will be sent to you promptly. Other biological surveys available: Erie-Niagara System, $2.25; Champlain Watershed, $2.90; St. Lawrence Watershed, $2.40; Raquette Watershed, $2.65; Fresh Waters of Long Island, $1.25; Lake Ontario Watershed, $2.50, and Upper Hudson, $2.80.—R. B. M.*

Crow hunter

Dear Editor: Being an avid crow hunter on Long Island is becoming much like fishing in a goldfish bowl!

Hunting these wary and destructive birds is wonderful sport, and I believe, in the best interest of conservation and the farmer. It seems a shame to let my hard earned ability to call them to the shotgun wither and atrophy while these bandits tear up the farmers' corn and rob every birds' nest within their reach.

To find new fields to hunt I intended to write to some of the farm organizations in Westchester County, which seems to be fairly well plagued with crows (bless their black hearts!).

After reading the April-May, 1956 issue of THE CONSERVATIONIST it occurred to me that if you would be so kind as to publish my plight in your "Letters to the Editor" department it would reach the attention of many persons suffering from an overdose of crows . . . especially those in nearby Westchester County.

Any such person may consider my "services" at his disposal. My address is: Ted Lindberg, 470 Brookside Avenue, Roosevelt, N. Y., phone 9-6803.

I would like to mention in closing that I believe THE CONSERVATIONIST is a valuable link between the public and the work of your department, and required reading for all the hunters and fishermen of the State.

Ted Lindberg, Roosevelt, L. I.

• *As one crow hunter to another we predict for you a long and happy life—replete with crows.—Editor*

Paradox

Dear Sirs: Have noted your article "Paradise at Paradox" in the June-July issue.

This is indeed a revelation to me as I went to camp (boys) at Upper Paradox near the Post Office 1912 to 1917 July and August of each year and for many years after that during the Summer up to 1936 and never saw one blackfly.

I know what they are as I have been their victim in Maine, New Jersey, Wisconsin and Vermont.

While at Paradox I caught the following fish which are considered pretty good records although not top fish: Smallmouth bass, five pounds; lake trout, 11½ pounds; perch (yellow), 1¼ pounds; pickerel, 7½ pounds (possibly pike); and a snapping turtle which was almost 14 inches across and weighed almost 20 pounds.

This was, of course, before civilization, outboard motors and 25 cars to the mile got into that paradise.

Julian W. Schwab, N. Y. C.

• *We would guess that the timing of your trips to Paradox years ago was about right to miss the blackfly season—normally in June. Even so, we think you were pretty lucky to have not seen any at all.—Editor*

Walnuts

Dear Editor: We have been a subscriber to your magazine for many years but up to date have seen no detailed article concerning the habits and growth of black walnut trees. We have on our property a goodly number of such trees and are interested to learn more about them.

Is there a society in New York State dedicated to the conservation of nut trees? Also, is it possible to purchase seedlings of black walnut, hickory and other nut bearing trees as we would like to propagate the species?

Charles O. Graf, Cold Spring Harbor

• *You will be pleased to know that there are several nut tree nurseries in and around New York State: John W. Hershey, Box 65 F, Downington, Pa.; Benton & Smith, Wassaic, are a couple.*

At the latter address, in addition to purchasing planting stock of both English and American origin and a variety of grafts, you can also purchase a book entitled "Practical Nut Growing" at $1.50.

We are glad to advise, too, that there is an organization devoted to the raising of nut trees. It's the "Northern Nut Growers' Association."

We shall see what we can do about getting an article on walnut trees in the magazine in the not too distant future.—Editor

Fox trapper

Dear Editor: I was just thumbing through the June-July, 1953 issue of THE CONSERVATIONIST and ran across H. Amidon's report of catching two foxes in one trap at the same time. In response to your request to hear from anyone who can beat or tie this, I'd like to inform you that this same phenomenon happened to me.

I also trap foxes for the N. Y. State Rabies Control Program and while den trapping in June, 1954, Town of Albion, Oswego County I caught two at once in one No. 2 fox trap—both by the right front foot. State Game Protector Bob Brown of Pulaski can confirm this as he was with me at the time.

During a 25-day period of trapping in this county I took 102 foxes. In eight months the catch was 364. This will give you some indication of the effectiveness of our program.

Roswell Greene, Cold Brook

• *We learn with regret that Mr. Greene is presently laid up in the hospital. We hope that he soon will be well again and back on the job.—Editor*

Boat registration

Dear Sir: Can you please tell me if the law regarding registering all boats in New York State is still in effect? We are on a small lake in Jefferson County. About five of us campers here registered our boats and painted the numbers on them while there are other campers that seem to have ignored the law and have not registered their boats or painted numbers on them.

Norbert C. Mogg, Syracuse

• *Section 71 of the New York State Navigation Law requires all mechanically propelled vessels to be registered with the Department for the purpose of identifying ownership of such vessel. If you know of motor vessels not registered on your lake it is your duty to report same to the State Police in that vicinity.—E. C. Hudowalski, Asst. Superintendent of Operation & Maintenance, N. Y. S. Dept. of Public Works*

Fly dope

Gentlemen: In this issue at hand of THE CONSERVATIONIST (June-July) I read a request from a Mr. Henry Galpin of Albany, N. Y. for a really good "fly dope"—so here it is.

Glover's mange medicine; comes in a non-refillable bottle, costs less than a dollar a bottle, contains oil of tar, does not evaporate, obtainable at any well stocked drug store.

Ben Bogert, Utica

• *Thanks for the suggestion. We're passing it along to Mr. Galpin via this means. Personal experience with the stuff on a dog of mine proved nothing could live with him, so maybe it'll work on blackflies.—R. B. M.*

More blackfly dope

Dear Editor: In response to Henry Galpin (June-July, 1956, page 45) concerning fly dope why not quote from "Woodcraft" by Nessmuk. "But more than 40 years' experience in the woods has taught me that the following recipe is infallible anywhere that —the blackfly—or our own poisonous insects do most abound.

"It was published in 'Forest and Stream' in the Summer of 1880 and again in '83. I have never known it to fail: Three ounces pine tar, two ounces castor oil, one ounce pennyroyal oil. Simmer all together over a slow fire and bottle for use. You will hardly need more than a two-ounce vial full in a season. One ounce has lasted me six weeks in the woods. Rub it in thoroughly and liberally at first and after you have established a good glaze, a little replenishing from day to day will be sufficient. And don't fool with soap and towels where insects are plenty. A good safe coat of this varnish grows better the longer it is kept on —and it is wholesome."

Nessmuk gave this information in discussing insect pests including blackflies and no-see-ums in the Adirondacks. I have made some but never had the opportunity to try it out there. The new repellents such as "Ticks-off" in pressurized can work fine for chiggers and ticks and discourage ordinary house flies around camp.

A. W. Allison, Terrace Park, Ohio

Or

Dear Editor: In your June-July issue there was a letter from Henry Galpin, Albany in regard to fly dope. My husband and I have a place heavily infested with biting blackflies and punkies or no-see-ums and after much experimenting with fly dopes, repellents, etc. I concocted the following and find it the best yet: Four teaspoons melted beeswax, two drams camphor gum, 2/3 cup melted mutton tallow, ¼ cup lard or other shortening and ⅛ oz. oil of Juniper tar (Cade).

This is fairly easy to mix and when applied generously will keep even your spouse away. It washes off easily with warm water and soap. Will not permanently stain clothing. This will in no way damage plastic frames of eye glasses as some repellents do. Store in covered jar.

We do not recommend the use of this with white shirts and Tuxedos.

Mrs. Watson S. Green, Rochester

Browse line?

Dear Sir: At page 43 of the April-May issue of THE CONSERVATIONIST in response to a query from a Max H. Olney wherein he asked whether a sharp line in trees growing along the shores of a pond was caused by deer browsing or ice, I think you gave him some bum advice. This is a common phenomenon in all northern lakes where a bank slopes sharply down to the water edge. The sharp line of the lower branches is not caused by deer browsing or ice but by the natural growth of the tree; on the shaded side of the trees, however, competition from other trees will cause all the lower branches opposite those shown in the picture to die out. On the shore side, however, there is no competition from trees, the branches can get full sunlight and there is no shade to kill them out.

The same "browse line" can be observed even where the trees grow along a high bluff twenty or twenty-five feet above the water level. It would be some deer that could reach up twenty or twenty-five feet and cause a browse line.

Howard Fernow, Attorney at Law, Ithaca

• *Next witness, please.—Editor*

Credits

First cover, New York State Museum; second cover, Hy. S. Watson; pages 2, 3, Forest Products Industries, Inc; 4, 5, 24, 25, 29, 38, 39, H. Wayne Trimm; 6, 7, Cardinali Studio, Fulton, Nick Drahos, Roy Irving; 8, Fred Chambers; 10, 22, 27, 31, Irving; 13, State Police; 14, 15, Drahos; 17, State Department of Commerce; 18, New York City Department of Water Supply, Gas and Electricity; 20, 21, Ellen Edmonson, Herbert Buckley; 26, Conservation Department, Cornell; 28, New York State Museum, Irving; 32, 33, Trimm, Joseph Dell; 34, F. C. Shaw, Dannemora; 35, 37, Earl McGuirk; 36, Don Fenner, Men's Garden Club, Rome; third cover, Clayt Seagears; fourth cover, George Inness.

Bedtime Story

The Birds and the Bees

I GOT this story from a female catbird so I won't swear that every little bit of it is true. You know how female catbirds are. But I'll vouch for at least some of the things—like the hummingbird giving the bumblebee a stiff poke in the fanny and the katydid with ears in his knees and stuff like that—for those things I have seen myself.

Anyway, this catbird built a nest outside my best looking-out-at-things window and I later discovered that she had woven a shed snake skin into it. So I mentioned the skin to the catbird and she gave me an odd look and began to talk.

This snake skin (said the catbird) I got from the garter snake which had just crawled out of it. I asked first if I could have it because once I was about to pick up a fresh-shed toad skin when the toad opens his big mouth and gulps in his skin—and almost me too. So I take no chances with this snake and he says sure, it's yours for the ah-skin.

Some of those snakes are cards, especially the garters. They've been around a lot.

Anyway I puts the skin in my nest. Don't ask me why or I'll ask you why you put a silly piece of cloth in your collar every morning but Saturday and choke yourself. I suppose it is just a custom. Like it is the custom of the hummingbird to make its little bitta nest out of plant down—like the fuzz from fern fronds—all fastened together with spider web.

Speaking of hummingbirds, I'll tell you a yarn which one told me yesterday if you'll draw a picture about it. Make it a curious kind of picture in bright colors because it's a queer, drab story. Put in a hummingbird pulling a spider web apart. Show a big fat Mamma golden garden spider with her puny little husband behind her. And down at the bottom put a young katydid with ears in its front knees. Add some flowers just to offset the buggy look.

(We tried to follow directions.)

Now then, that spider had its big cartwheel of a web strung between the highbush cranberry and a delphinium by your back door. She made the spokes out of strands of dry silk—the same stuff lens makers use for cross hairs in telescopes and things. And she made the cross rungs out of sticky silk—so any bug that hits it soon gets all fouled up. The spider is smart. She runs along only on the dry strands and when a big bug like a grasshopper hits the web she scrams out and throws a whole mess of web around it so that soon it can't even wiggle a leg. Then she poisons it with her fangs, sucks the body dry, cuts the carcass loose and her no-account husband feeds on the leavings.

Well one day a young katydid gets into her web and just when the spider is ready to lash him fast who should buzz along but this hummingbird. The bird starts to pull the web apart for its own nest and so the katydid escapes. At this point a few hundred little plant lice (which this garden spider loves to eat) start to cheer like crazy and the katydid hears all about what happened through the big ears in his knees and he is very grateful indeed.

I can't tell what kind of a katydid it is in your drawing because it is a very crumby portrait but *this* one was a male of the broad-winged kind that says "katydid, she did" up in your maple tree. It is the *only* kind that says that and only the men say it. Mother, who has prettier ears in her knees, can only listen and lay eggs. Now this particular katydid can't say it any more—but I'm getting ahead of my story.

So back to the hummer, which is a very special little bird. It eats thousands of tiny little bugs and it sucks nectar from flowers. To do this it has a tubular tongue built like a double barreled soda straw which it can stick out an inch beyond its long bill.

Now this long beak is very handy for feeding its babies. It collects a soup of bugs and nectar in its crop. Then it shoves its whole bill way down inside its babies like it was going to stick out the other end and upchucks the whole works. Very simple. Baby doesn't even have to swallow.

Well, very often a big bug like a bee is in the flower that the hummer wants to take a suck at too. So the bird gives the bee a belt in the behind with its bill and the bug beats it.

One day this hummingbird finds a big clown of a bumblebee with its front end pushed deep in a flower and so she makes a quick stab at its fanny. But wow! She has made a dead center hit and the bee's stinger is rammed right up her tubular tongue. She is so pained and astonished that she zooms right smack into your front window so hard that she bends the ends of her bill apart like a working cotter pin.

What trouble! Tube plugged. No nectar. Bill bent so she couldn't anymore stick it down the throats of her babies than you could push a broom down your rain spout which, incidentally, is falling apart.

So she buzzes (at the rate of about 70 wing beats per second) to the top of the maple to ponder her perplexing, painful problem. And by chance she sits down next our pal—the pale green katydid and she squeaks out her plight. And, of all things, Katy gets a bright idea—which is indeed unusual or he wouldn't play the same old record all the time.

The male broad-winged katydid, you know, has big arched wings that act like the sounding boards for a violin's strings. The wings overlap at the shoulder and right there the left wing has a built-in file while the right wing has a hard, sharp scraper. Katy opens his wings, then brings them down with different jerky motions, scraping the scraper on the file—and that makes the sound.

So he tells the hummer to stick her blunted beezer down between his shoulder blades and he starts scraping away. And pretty soon the old beak is sharp as a tack. Then he grabs one of his feelers (which he also uses to smell with) and he rams the sensitive end into the hummer's tongue and he pushes and pushes at the stinger. He has plenty of feeler, as you show in the picture, for a long ramrod and further and further up the tongue it goes and presto! Out pops the stinger. Her good deed is repaid and away she flies—after the proper thank-you.

Now this katydid was a male of the broad-winged kind that says "katydid, she did" up in your maple tree. It is the *only* kind that says that and only the men say it. Mother, who has prettier ears in her knees, can only listen and lay eggs.

But the poor katydid had blunted his scraper. He can't say katydid anymore. And if you listen by the lilac, you will see what I mean. Then the catbird gave me a second odd look and flew away.

I went to the lilac and sure enough I heard a katydid. But the sound was dull and different.

"Zeep, Zeep, Zeep," it went. And then I spotted the big green fiddler. It wasn't a broad-winged katydid at all! It was just a plain fork-tailed bush katydid.

I warned you that you shouldn't necessarily believe *everything* a female catbird tells you—especially one with a snake in her nest—or, for that matter, *anybody* with a stinger in the tongue.

—CLAYT SEAGEARS

This is the picture, drawn from the catbird's description, of the hummingbird freeing the katydid from the garden spider's web. The cheering plant lice are not shown because they were much higher up. Father spider is the little one. His wife ate him instead of the katydid, whose ears show just below the bend of his front knees.

"Peace and Plenty" By George Inness, courtesy Metropolitan Museum of Art